A VERY MERRY S GAUGE LAYOUT...

CLASSIC TOY TRAINS

O AND S GAUGE FOR THE OPERATOR AND COLLECTOR

JANUARY/FEBRUARY 2012

MTH TRAINS' NEW SW1

EMD's small but mighty switcher

LET IT SNOW!

plus 5 MORE MODELING TECHNIQUES

Ives set is a holiday standard ▸ 26

Transplant a horn into a silent Lionel F3 ▸ 44

The inside scoop on Lionel's Flyer production ▸ 28

NO ORDINARY N-SCALE...
2-6-0 MOGUL & 4-4-0 AMERICAN

INDUSTRY LEADING DCC & SOUND

2-6-0 Mogul w/Coal Square Tender

[illegible]

4-4-0 American w/Coal Square Tender

[illegible]

ROAD NAME SPECIFIC DETAILS

MRC

Looking for a modern N Scale diesel to pull your freight consists? Look no further than Kato's selection of EMD "SD" and GE "AC" series locomotives! With a wide variety of roadnames and prototype styles, you can enjoy these powerful, silky-smooth running engines. No matter the region you prefer to model! Need some freight cars to accompany them? Kato USA's selection of Bethgon coal and potash gondolas are an ideal match!

All Kato N Scale engines are DCC friendly, making upgrades a snap, and are built using Kato's in-house designed and built motors and mechanisms made in Japan for premium quality and performance!

Find these Kato engines in your local hobby shop today!

Item #	Description	MSRP
[illegible]	KATO [illegible] - [illegible]	[illegible]
[illegible]	KATO [illegible] - [illegible]	[illegible]
[illegible]	KATO [illegible] - Union Pacific [illegible]	[illegible]
[illegible]	KATO [illegible] - Union Pacific [illegible]	[illegible]
[illegible]	KATO [illegible] - Union Pacific [illegible]	[illegible]
[illegible]	KATO [illegible] - Union Pacific [illegible]	[illegible]
[illegible]	KATO [illegible] - BNSF "Swoosh" [illegible]	[illegible]
[illegible]	KATO [illegible] - BNSF "Swoosh" [illegible]	[illegible]
[illegible]	KATO [illegible] - CSX [illegible]	[illegible]
[illegible]	KATO [illegible] - CSX [illegible]	[illegible]
[illegible]	KATO [illegible] - Norfolk Southern [illegible]	[illegible]
[illegible]	KATO [illegible] - Norfolk Southern [illegible]	[illegible]
[illegible]	KATO [illegible] - Union Pacific [illegible]	[illegible]
[illegible]	KATO [illegible] - Union Pacific [illegible]	[illegible]
[illegible]	KATO ES44AC - Canadian Pacific [illegible]	[illegible]
[illegible]	KATO ES44AC - Canadian Pacific [illegible]	[illegible]
[illegible]	KATO ES44AC - Union Pacific [illegible]	[illegible]
[illegible]	KATO ES44AC - Union Pacific [illegible]	[illegible]
[illegible]	KATO ES44AC - BNSF "Swoosh" [illegible]	[illegible]
[illegible]	KATO ES44AC - BNSF "Swoosh" [illegible]	[illegible]
[illegible]	KATO ES44AC - Canadian National [illegible]	[illegible]
[illegible]	KATO ES44AC - Canadian National [illegible]	[illegible]
[illegible]	Bethgon Coalporter 8-Car Set - [illegible]	[illegible]
[illegible]	Bethgon Coalporter 8-Car Set - [illegible]	[illegible]
[illegible]	Bethgon Coalporter 8-Car Set - BNSF "Swoosh"	[illegible]
[illegible]	Bethgon [illegible] 8-Car Set - [illegible]	[illegible]
[illegible]	Bethgon [illegible] 8-Car Set - [illegible]	[illegible]
[illegible]	Bethgon [illegible] 8-Car Set - [illegible]	[illegible]
[illegible]	Bethgon [illegible] 8-Car Set - [illegible]	[illegible]

THE DASH 9 FOR RIVET COUNTERS
IN STOCK SUMMER 2019
4313
Preorder Now at
844-9TRAINS & Select Retailers
HO N
OPERATOR

N&W J, HO
IN STORES NOW
N&W Y6b, HO
IN STORES NOW
Greyhound Hudson, HO
IN STORES NOW
2013
DELIVERY
BONANZA
ATSF 4-8-4, HO
IN STORES NOW
SD7 / 9, HO
JULY 2013
EMD SWITCHERS, HO
IN STORES NOW
PRR J1, HO
JULY 2013
C&O T-1, HO
JULY 2013
GE C30-7, HO
AUGUST 2013
NYC NIAGARA, HO
AUGUST 2013
See your dealer
to PREORDER
today.
WWW.BROADWAY-LIMITED.COM

OUR 18' NARROW GAUGE CARS ARE LONG ON DETAILS

Finely detailed from the scraper-lined brake wheel to the underbody crossbeams, Bachmann is delighted to introduce this line of shorties. 18' Freight Cars. They also feature body-mount Mark B couplers, and metal wheels. Packed two to the box, these 18' cars will go a long way to adding new interest to your model freight line.

TWO TO THE BOX - SHIPPING NOW!

RAIL MODEL JOURNAL

How YOU can do it BETTER

March 1990 Volume 1, Number 10

Table of Contents: "The Journal"

All Scales All Scales

Techniques For better (and easier modeling)

Roadbed for realistic layouts 4

Glues and quick techniques 4

HOW TO: Use Your Airbrush's "Spray Lance" for Detailing 7

Assembling and Disassembling the Bar "Servo" 10

Single-Handed Operation Using the Servo Bar 11

Locomotives at Speed: How Both Engines Contribute to Lash 14

Plans Plans

Depressed "A" Car: Inexpensive Underbody and Cast-Frame Plans 16

Publications Subscribe Not Necessary Publications Subscribe Not Necessary

N.M.R. Model Railroad Newspaper Reviewed 18

Small Engine Clinics Announced, via Mail 19

Operations Go Anyplace Load Anyone Move Anything Operations

The "Next Year" of Operations: Part II: Should We Go Prototype? 12

Model Railroading Techniques Model Railroading Techniques

Weathered Railroads: Track Cleaning Locomotives and Engines 10

Q & A with Us

Reader's Mail & Our Quick Answers 20

HO Scale HO Scale

Layout Design, an HO/HOn3 Layout 1

HOW TO: Make an Inexpensive Mini-Lathe Using Hand Tools 8

Interview: Talking with Railroad Historian and Author Bill Edson 14

Locomotives to Collect — Steam Locomotives

Announcing "Locomotives to Collect" Series Debuts 11

Rail Pictures: Photographs from the Model Railroad Press Kit 16

Design Clinic

Color Clinic: Airbrush Paint Jobs and Weathering, Including Color Weathering 22

Car Workbench: Detailing Those Off-the-Shelf Cars and Kits 23

Photos on Display Clinic, pts. 2: Backdrop, Prop, Building Lighting, Scene Effects Photos 26

Operating Accessories Workbench: "Add" Some Extra Layout Operations 28

Rail Transportation: "Piggy Backs," Loads to Consider Using, Car Types Used, etc. 30

Personality Clinic: Railroad Characters, Workers and Commuters 32

N Scale N Scale

Design Clinic

Color Clinic: Airbrush Paint Jobs and Weathering, Including Color Weathering 22

Operating Accessories Workbench: "Add" Some Extra Layout Operations 28

O Scale O Scale

Interview: Talking with Railroad Historian and Author Bill Edson 14

What's New on the Model Railroading Scene: Five Different New Items 24

G Scale G Scale

Trains and Railroads for Outdoor Operation 6

Departments Departments

Model Railroad Mail 3

Classified 31

Readers' Events 27

Charity Classifieds — Readers Helping Organizations 27

Publication Data: Rail Model Journal (ISSN 1050-0545) is published monthly by Carstens Publications, Inc., 1970 Crossroads Drive, Unit G, Newton, NJ 07860. Second-class postage paid at Newton, NJ and additional mailing offices. Subscription rates: $24.00 per year in the U.S.A. and Canada; $30.00 per year in all other countries. Single copy price $2.50 in the U.S.A. and Canada; $3.00 in all other countries. Subscription orders, changes of address and all correspondence should be addressed to Rail Model Journal, P.O. Box 700, Newton, NJ 07860. Postmaster: Send address changes to Rail Model Journal, P.O. Box 700, Newton, NJ 07860.

Copyright Notice: Rail Model Journal (ISSN 1050-0545) is published monthly by Carstens Publications, Inc., 1970 Crossroads Drive, Unit G, Newton, NJ 07860. All contents of this publication are copyrighted by Carstens Publications, Inc. Reproduction of any portion of this publication without the written permission of the publisher is prohibited by law. Rail Model Journal is published as a service to the model railroading hobby and industry. Although every effort is made to verify the accuracy of all information published herein, the publisher cannot assume responsibility for errors or omissions. Publication of any product, service or information does not constitute endorsement by the publisher. Rail Model Journal reserves the right to reject any advertising or editorial copy deemed inappropriate for this publication.

Publication Office: Rail Model Journal, P.O. Box 700, Newton, NJ 07860. Telephone (201) 383-3355.

Advertising Rates: Rail Model Journal accepts boilerplate display and classified advertising. Rates and requirements will be furnished upon request. Address all correspondence to Rail Model Journal, Carstens Publications, Inc., P.O. Box 700, Newton, NJ 07860. Telephone (201) 383-3355.

Subscription Rates: U.S.A. and Canada, one year $24.00; two years $44.00; three years $64.00. Other countries, one year $30.00; two years $54.00; three years $78.00. Subscription orders, changes of address and all correspondence should be addressed to Rail Model Journal, P.O. Box 700, Newton, NJ 07860. Telephone (201) 383-3355.

Printed in U.S.A.

Good enough?

When searching for "good enough," the implication is that the marketplace presents an effort necessary to get the best from ourselves. Related to that an expression like, "Close enough for government work," suggesting that expectations weren't very high or maybe even

In our hobby world, when is something "good enough?" This is a controversial (maybe) question and the answer will not only vary with different people but will vary depending on the application. For instance, for a beginner in the hobby—someone with little or no experience, who is brand new to rocks, architecture, paints, and materials—"good enough" might be getting a couple plants (an evergreen and maybe a deciduous) in the ground, getting a couple pieces of rock placed, and getting the track down. For someone who has been in the hobby for a while, who has a good understanding of the basics, and who is interested in more challenging projects, "good enough" might be getting a couple plants (an evergreen and maybe a deciduous) in the ground, getting a couple pieces of rock placed, and getting the track down. For someone who has been in the hobby for a while, who has a good understanding of the basics, and who is interested in more challenging projects, "good enough" might be getting a couple plants (an evergreen and maybe a deciduous) in the ground, getting a couple pieces of rock placed, and getting the track down.

For the other end of the spectrum is the master craftsman who's been at it for a while, who is interested in a well-engineered railroad, and who is committed to doing consistently quality work. For this person, "good enough" is probably always going to be a moving target.

For most of us, "good enough" falls somewhere in between. We have varying amounts of experience and skill, so our personal "good enough" will probably be a reflection of those things. Think of it like this: do a good job—remember what's the point of doing?

On the other hand, there are times when we're just not motivated to do a good job—times when we're just looking for the things that we can do that will get us from point A to point B using just the minimum amount of effort. Can you ask more people say they can do a good enough? There's no particular answer to this. The job required only minimal effort to be successfully accomplished. Nothing more was required and there was no reason to expend more effort or worry or something that created an annoying gap.

When we do something for our own satisfaction, however, "good enough" takes on more meaning. In our hobby, most of us want to do the best we possibly can. In the best of circumstances, this means pushing the limits of our own abilities to improve our skills and subtly convince us to do a better job than we were able to do yesterday. It's when we hit the wall of those abilities that "good enough" comes into play. "Good enough" in these circumstances often means, "I've done the best job that I can do given my current knowledge, and skill level, and I will have to do it a little better or good a job as I was hoping to, but it is the best job that I am able to right now."

The interesting thing is that we have pushed our very hobby back just a little bit. The point of this editorial is to maintain our goal levels. We will usually see that today's effort is superior to that which came before. That small was good enough then, because it was the best we could do at that point in our development. It is our step after small becomes unacceptable. If we daily "good enough" is the best we can do then it really is "good enough."

Garden RAILWAYS

EVOLUTION OF A SERIOUS MODEL

NOW AVAILABLE

HORIZON | VISIT | CLICK | CALL

Intermountain Railway's ES44AC diesel locomotive, released in fifteen Phase One (current) series model decorated for CSX (as delivered and painted gray), Norfolk Southern (as delivered and painted gray), and BNSF No. 3rd Heritage II and III schemes in four model road-specific paint schemes (painted gray in road numbers each). The HO scale models have a detailed cab interior, factory-painted wire grab irons, and railroad-specific details. Direct-current models retail for $199.95. Versions with a decoder-ready SoundTraxx Tsunami2 sound decoder (as for $299.95 (Athearn Trains, 866-508-8808, www.athearn.com

HO scale locomotives

• Montreal Locomotive Works M636 diesel locomotive. Bowser is releasing its locomotive scheme and detail combinations (some) CP Rail (weathered scheme) and detail combinations (Delaware Lackawanna (not weathered) and gray and red schemes, one number each). Mountains is released in two numbers. Packs have factory-installed wire grabs and lightning rods and feature separately-applied lights, four handrails and Miniature Nine-Pin & Pneumatic (or Minimatic) Couplers (Bowser Manufacturing, 800-347-7232, www.bowser-trains.com).

• Electro-Motive Division GP9 diesel locomotive. Atlas Control, Non-Sync Control, and Interface (N). Powered-per-specific details, die-cast metal weight, more light-emitting diode headlights and Kadee #5 couplers (2 and 4-axle dual trucks $10; Undec'd Select sound decoder (not available per scheme) $229.95; 2, 4-axle dual-c scheme) $189.95; with dual-axle $30; Undec'd Select sound decoder, $149.95; Walthers Inc., 414-527-0770, and locations.com).

Electro-Motive Division GP7 diesel locomotive. Atlas offers two road numbers on GP9s decorated for Burlington Northern, Missouri, Pacific & Santa Fe, Denver & Rio Grande Western, and Pennsylvania RR. The N scale model is offered in nine numbers per scheme and features die-cast metal gearbox, light-emitting diode headlight, and Accumate couplers. Direct-current models retail for $29.95; versions with a motor-only decoder are $34.95. Atlas Model Railroad Co., 978-387-3300, www.atlas.com.

HO scale freight cars

• Assorted freight car kits. American Refrigerator Transit 36-foot fowler dual-door refrigerator car, $17.95; Chesapeake & Ohio 36-foot double-sheathed boxcar with arched roof and straight roofwalk, $17.95; Chicago, Burlington & Quincy / United States Railroad Administration 40-foot fowler freight car, $19.95; three-pack, $49.95; Raleigh Valley 36-foot double-sheathed boxcar with arched roof and late-style roofwalk, $17.95; Southern Pacific 36-foot arched-roof box car with plastic wheelsets and Accumate couplers, Accurail, 616-791-1400, www.accurail.com).

• 40-foot boxcar with Superior doors (Chicago & Illinois Midland) dark green with red ends; Chicago, St. Paul, Minneapolis & Omaha (yellow and green with "Route of the 400" lettering); Delaware, Lackawanna & Western ("Route of the Phoebe Snow" slogan); Pacific Fruit & Express dark green with "Overland – the Fast Way – Chicago" slogan

Woven Covers) dark green with "Die Wise Tree Rubber" (legend) and St. Louis maintenance / Main Street Train Freight" (legend). Store-road numbers per scheme. Valid-fencing cracks with 37 metal reinforcers and train standard. Multilayers scale complete. $49.98. (1) Kaiser 2018. Ready to Roll. Amazon, Cranes, $49.98. $49.98 and a different.com

3 Trinity 3,400-cubic-foot-capacity Pressure Differential covered hopper. Arches Formerly Milford (Del) logo. Cranbrook ("Trending Interiors" slogan, on road numbers). Four 1-piece 24" X 3" reporting marks and Trinidad headlamp. Plastic weights per wheels unless noted. also available undecorated. Injection-molded plastic model with separately applied gold trim and simulating brass and nickel-metal grabirons, platforms. $22.99. Undecorated, $22.99). A decision for every Concepts. "Trending America" car will be made in the Commercially Fixed Bank of New Jersey. Atlas Model Railroad Co., 888-287-5900, www.atlasrr.com.

4 American Car & Foundry 40-foot refrigerator cars. (1) N-5. Cranes & Transcontinental "Pioneer "Flying Cranes" lettering in blue-road numbers and Mother Goose" (small) in two-numbers. Kadee no. 14 couplers, prototype-specific lettering and detail placement, and built-in gasket lettering and openings in underbody (in Chrome, Sound Car digital sound decoder-sold separately). $64.95. Kadee plan to be announced. Blackstone Models, 970-290-9696, www.blackstonemodels.com.

5 Bethlehem 3,701 four-bay hopper. Nine road numbers. Division Pacific (CTP and SCTP delivery). Six road cars, but cars "Five interesting trains, gold trims, brake rods, and time hangers. Interiors and Fascinations (IR) are Rail Control tracks with 24" metal reflections, and Kadee no. 148 scale couplers. $34.99. Platinum Series. Fourthcar, 866-366-1700, www.exposrack.com.

6 American Car & Foundry 10,000-gallon insulated tank car. Two-piece interior. Parker's Lane. Exit platforms cut with two-piece with centering cracks and no. 148 couplers. $44.95. Kadee Quality Products Co., 342-828-4800, www.kadee.com.

7 American Car & Foundry 50-foot exterior-post boxcar. Nine-piece interior. Archives, Inspiring & Inside Air Southern packages. Division & Milestones. ("Two Michigan" slogan). Western Pacific / Delaware Yellow with Union Pacific herald and "Building America"

Fred's Coal Shop. Showcase Miniatures' laser-cut wood kit features tab-and-slot construction, peel-and-stick backed embossy plaster metal castings, high-resolution graphics, and customizable details. The kit's scale for measures 9" x 6" and sells for $44.95. Showcase Miniatures, 334-705-5216, www.showcaseminiatures.net.

Architects Trapeze & Harry Fo
[illegible] passenger cars, Lenzer paint rigs
launched a new line. the Andreas Pate family. The first two cars in the series
are Santa Fe Hallpen Death Valley and Grand Canyon in the shadow line
paint scheme. The N scale models feature an injection molded plastic interior
body mounted Magne-Matic couplers, and new window glazing. The
cars, produced by Micro Trains Line Co., retail for $[illegible] each.
www.lionelsmith.com

(Angel) Pennsylvania & Rhinestone
Montana Rail Link Locations collection
and Wisconsin & Southern. Two more
coalition cars arriving. Plate B (steel-
sides), 37 (smooth-sided wheelsets) and
Proto Max couplers, $27.98. Rightway
Shoreline Way B, Middlebury, Ind.,
574-825-5776, www.middlebury.com

• United States Railroad Administration double-sheathed express boxcar. Northeastern Pacific (1918-
version). Clear plastic body sheets,
metal cut and rivet lines and
Sunnyside Model Works metal formed
corner steps for no couplers. $24 each
(as shipped). With extra Tahoe Model
Works set. (1) stacker with cards (10
wheels, $12; with Tahoe Model Works
(2) (1) stacks with cards (8 wheels, $13
Presentation Models LLC., 307-690-9163,
www.presentationmodels.com

HO scale train sets

• Whistle Punk train set. Electro-
Motive (Division (EMD) diesel locomotive,
four ballast-loaded freight cars

hop window cabooses, 36" x 45" oval of
Backtrack track with molded roadbed
and Model Railroad Corp. Ballgames
(200 power pack), $279.98. Model Power
line, Model Railroad Corp., 732-225-
2540, www.modelrailroadcorp.com

N scale locomotives

• Electro-Motive Division (EMD) GP7 diesel locomotive. Painted (Phase 1 paint
scheme, pre-1954 light version). Three
road numbers. Comes with light
steaming dual headlights, illuminated
number boxes, all-wheel electrical
pickup, and body-mounted couplers.
Direct current model, $215 with Digital
Command Control sound decoder,
$259. Atlas (14 Inc., 847-781-6500,
www.atlasrr.com

• Electro-Motive Division (EMD) diesel locomotive. Locomotive (Phase
3 paint scheme, pre-1954 light version).
Three road numbers. Comes with light
steaming dual headlights, illuminated
number boxes, all-wheel electrical
pickup, and body-mounted couplers.
Direct current model, $215 with Digital
Command Control sound decoder,
$259. Atlas (14 Inc., 847-781-6500,
www.atlasrr.com

N scale freight cars

• Assorted freight cars. (1) (2) 40-
foot Stone Age Gadget (years 1937-forward)
two-road installations, (2) 40-
foot Stone Age Gadget (years 1937-forward)
two-road installations, (2) 40-foot
enclosed side boxcars (1937-39), Accurate
Delivery Systems Procurement (4) 40-foot
general service tank cars (1937-39) Standard
Co. (8) 40-foot boxcars, $27.98. Micro Trains
(4) 40-foot enclosed side boxcars (23) 40-
foot one-piece molded plastic models with
plastic wheelsets and Magne-Matic couplers. Micro-Trains Line Co., 541-516-
7722, www.micro-trains.com

N scale passenger cars

• Aluminum Car & Foundry 60-foot passenger car set. Smoking, Observation & Members. Four coaches and
one 60-foot observation car. Separately
applied window glazing, diaphragms
and roof vents. Observation car has eye,
evenly applied red railing. Kinds and
streamlined lettering. Several quarter (60)
Trainmen Day. Atlas Model Railroad
Co., 800-487-2882, www.atlasrr.com

• Amtrak Amfleet II equipment. Two
coach on and cab and baggage car two-
pack. All models are decorated in phase
3 paint scheme, $19 each. Kato USA Inc.,
847-781-9890, www.katousa.com

N scale structures

• Glover's Ridge Supply. Wood ice
building again and detail castings. Set kit
has bricks (Lake Model Works, 307-789-
7495, www.lakemodelworks.com

O scale freight cars

• NE-8 caboose. New pack-wheel
transit cars a (mounted) pacifica,
features(2) exploring models. Two road
numbers (Southern and Great Western
Central (blue), Portable & Western and

Derrick car. This Bachmann circle model [illegible] a decorated for maintenance of way. Bachmann Trains, www.bachmanntrains.com.

Weathering washes. This Life Color set [illegible] includes five factory-mixed washes and exhaustive illustrated instructions. Kalmbach Hobby Store, KalmbachHobbyStore.com.

Assorted trailer frames. Griffin & Child's and Sunny Days are HO scale structures

from Woodland Scenics. The models retail for [illegible] each. Woodland Scenics, www.woodlandscenics.com.

Paint brush set. Pass-t-the produces this four-brush set [illegible]. Brush sizes are 0, 1, 2, and 3. Kalmbach Hobby Store, KalmbachHobbyStore.com.

Electric Mobile Shredder (EMS) diesel locomotive. A Burlington Northern Sante Fe (BNSF) passenger unit is an Athearn's first scale Genesis series. Direct current models sell for [illegible] versions with a SoundTraxx Tsunami2 sound decoder list for [illegible]. Athearn Trains, www.athearn.com.

Acrylic airbrush paint. Select colors from the Modelmaster Density and Paint acrylic line are available on the Kalmbach Hobby Store. The multi-surface hobby paint dries to a satin finish. A 1-ounce bottle is [illegible]. Kalmbach Hobby Store, KalmbachHobbyStore.com.

PRR 1,257-cubic-foot-capacity double-door boxcar. City of Prineville Ry. is one of four road names on this release. The HI plate car [illegible] has an 8-panel roof and body mounted brakgear. Atlas Model Railroad Co., www.atlasrr.com.

HO SCALE TRAIN STUFF FROM MENARDS®

Pumphouse Hotel & Bistro. This N-scale structure has retained a rustic structure. Pumphouse Hotel & Bistro features a laser-cut micro-plywood support system with peel-and-stick shakeshingle, stone-look foundation, door and resin detail castings, and a color sign sheet of various packing brands. The N-scale structure measures 8" x 5" x 4.1". It sells for $200.00. The N Scale Architect, 847-745-8870, www.thenarch.com.

and wheels. Interchangeable spoon heads and wheel and tire sets. York Haven & Riverbend Carriage, Black, and white. Die-cast metal chassis produces idle sound. Illuminated interior, separate headlight and running boards and safety bracing railroad trucks are included. Second quarter 2018. Atlas O, 866-487-5740, www.atlasrr.com.

S scale locomotives

• Electro-Motive Division GP38-2 diesel locomotive. Three-pole scale motor and flywheel. Three-axle trucks. Metal side frames. Die-cast metal body. Separately applied grab irons, handrails, and horn. Three road names available. Two-color white, optional green and gold, and functional light-emitting diode headlights. Unequipped (light-less and DCC drop-in Digital Command Control decoder. Minimum 22 inch radius (18"). www.scalestructures.com.

S scale freight cars

• 40-foot single-sheathed boxcar. Non-pose scheme in Canso Fish Shipping (Prince). Rolled metal roofing boards, photoetched doors, black steel metal wheels, and metal grab iron plate. Interchange S Line, 614-764-1783, www.interchangeline.com.

• Gunderson 60-foot hi-cube boxcar. CTTX 153618 repainting shelter. Textile steel sections. Scale-grid coupler and metal wheelsets. Interchange S Line, 614-764-1783, www.interchangeline.com.

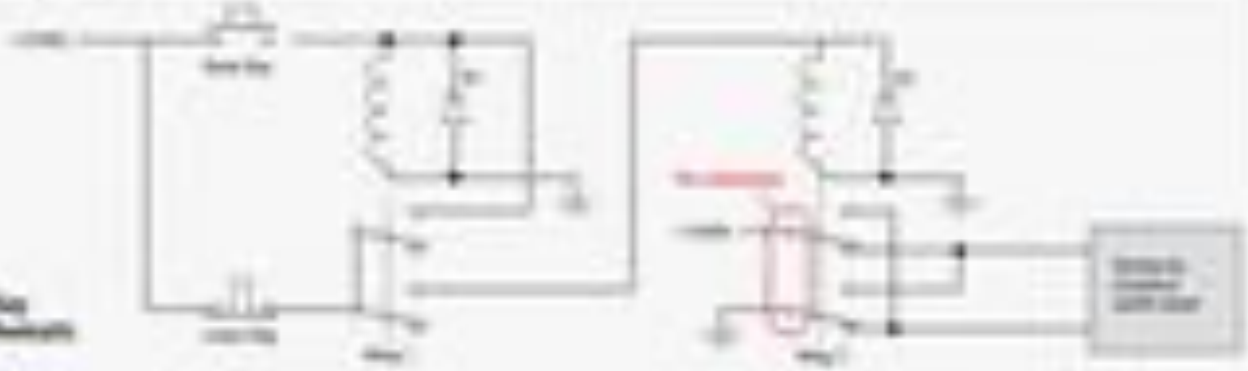
Tools

• Xuron 860 two ounce polyethylene dispensing bottle. Includes three wire-less and capillary tubes (.040", .030", and .020" needle diameter). $6.75. Xuron Corp., 207-283-1401, www.xuron.com.

Software

• TrainPlayer version 6.0. Control TrainMaster Command System locomotives, and a high-end sons. Free upgrade for users of version 6.0 to 6.3. $49 upgrade for users of versions before 6.0, and $99 for new users. TrainPlayer Software, 707-328-0748, www.trainplayer.com.

Correction



Correction. The wiring diagram with Dan Ayl's article "A signal for freq range" in the January 2018 Model Railroader contained an error. The corrected diagram is shown above.

Club offerings

• Keith Tank Line tank car. Forty Train Group HO-scale United States Railroad Administration design kit produced for the Susquehanna Division, Mid-Eastern Region of the National Model Railroad Association. Eligible car based on Pullman-Standard Dwelling Co. in Philadelphia ("Honestly tastes of Colegate Spirits and Alcohol"). Limited to the number on a Keith car number list up to 100 car numbers. $34.99 plus $4.99 shipping. Check or money order to Susquehanna Division, MRR/NMRA, Jim Beaver, Pa., New Holland, PA 17557.

• The Orrville Railroad Heritage Society Inc. 40-foot Association of American Railroads boxcar. Accurate HO-scale kit custom decorated for The Orrville Railroad Heritage Society Inc. in commemorate the Orrville Union Depot bicentennial. $39.95 at the depot Gift Shop. Mail order kit to (include shipping in U.S. addresses (Ohio residents add 6.5 percent sales tax (Birch St., P.O. Box 31, Orrville, OH 44667; www.orrvilleheritage.com/store.html).

• Western Maryland 50-foot double-sheathed boxcar. Weathered/factory HO-scale model decorated for the Western Maryland Railway Historical Society. The Unweathered model includes road-date decals. $37 (one or two cars); $35 (three or more cars). Shipping $4.5 (one or two cars); $10 (three or five cars). Maryland residents add 6 percent sales tax. Check or money order payable to WHSRRS. Please allow up to six weeks for delivery. Mail/Attn: J. Paul's Boxcars, 2421 Eagle Ave., Jacksonville, MD 21784-4444 [illegible]

Subtle weathering, as Mikaela Kirchmaier-Carmichael-Jones feels lacking, demonstrated in our October 2016 issue; can still be effective. *Tim Jones/MRM*

Whether to weather? That's a tough one

Q *Try as hard as I can, I just can't seem to muster up the desire to weather my trains. I'm not lacking in skills; I paint and detail my chassis, and I weather my structures. I've watched plenty of how-to videos, and I have the tools and materials – everything but the desire.*

Does the loss-and-trains movement as gifts from well-meaning friends and relatives are immune to the forces of nature. Once I replace the wheels, body-mount knuckle couplers, and kill the plastic sheen, these low-cost models take on an air of sentimental respectability.

I'm not alone here. I've seen zillions of layouts with sparkling-clean trains. So what's a fellow like me to do? Am I missing something? I enjoy looking at weathered models. I just can't bring myself to do it.

Dennis Hunsaker, Coral Springs, Fla.

A I understand your reluctance to weather that shiny, new rolling stock of yours. When I was new to the hobby, couldn't afford an airbrush, and had never heard of powdered pastels, I weathered my rolling stock by drybrushing. Like many modelers new to the hobby, I got the idea into my head that if weathering equals realism, more weathering must equal more realism. Looking back on the results of those primitive efforts today makes me cringe. I wish I'd left those cars pristine, like you do with yours.

Today, I better understand not only the look of the trade – jetboard, powdered pastels, paint washes – but also the idea behind weathering. The point isn't to make rolling stock look old and decrepit. Prototype railroads put a lot of effort into maintaining their equipment, after all.

But on the prototype, locomotives and rolling stock looked brand new for a very short time after coming out of the paint shops. If realism is modeling is our goal, then we must weather our models. That's a fact that I bet you already realize, since you weather your structures.

In the end, it's your railroad, and the decision whether to weather is yours. What you might not realize is you're already weathering your rolling stock. You maintain that to impress your rolling stock, you "kill the plastic sheen." I imagine you do so with a spray of matte lacquer, like Testor's Dullcote. Well, that's weathering. By spraying your models to cut the shine, you're already subtly dressing the effects of weather on your rolling stock.

Weathering need not be heavy to be effective. The best kind may be weathering you barely notice. Pick out one of those inexperience locomotives you mentioned and fade the paint with a spray of thinned-out Rustler Rehab; drybrush and some black weathering powder, and add just a touch of soot around and behind the exhaust stacks. Drum a bit of dust on the trucks. Add a shiny black streak below the fuel filler. You'll surprise yourself what a big improvement a little weathering will make.

Q *I'm building an On30 rail motor car as "doodlebug" from a resin kit. What's the best way to mount the scenic windows to the resin car sides? Should I use cyanoacrylate adhesive (CA), or does that ruin pack melt with acetate?*

Scott Parker, Bigelow, Ark.

Q *The engine that hits Jake Hilly Street's clean-cut "Santa's Coal Train" crosses a back-lit spotlight with a mottled cut in plaster's one main-line clear window section. The layout has an elevated front, L-shape corner with big scenic and view blocked, leaving a low level optimal for placing window glazing.*

Q *I have an HO scale F7A B set. Both units are powered. The B unit runs faster than the A unit. Can that cause any damage to the locomotives?*

Bob Thomas, Rockville, Md.

A It's possible, but not likely, and the damage wouldn't be severe. If the two motors' gears were badly overstated about the worst that might happen is that the wheels on one or both of the units would have excessive wear over the years might cause them under the motor.

You don't mention whether your two locomotives are operated under direct-wire DCC or on digital command control (DCC). If they're DCC equipped, you can address the problem by speed matching the locomotives.

Many DCC decoders – at least those made in the last decade or so – have what's called speed tables. These let you set the speed at different speed steps (1-31) on locos. The voltage delivered to the decoder at speed step 1 (1%). Finally, the voltage at full throttle, and (1%). Third, the voltage at the midpoint speed step. Setting these same parameters on the two locomotives will ensure that they run at the same speed step.

If you read your owner's manual, some decoders have adjustable 28-step speed curves for precise performance matching. So that we have to do it, and I carry Paulsen's DCC Concepts volume "Speed Matching for DCC Locomotives" in our help section. She owns and wrote episode 4 of "DCC Programming with Dave Kenseth" on Model Railroader Video (Mar.

Send questions and tips to mrmail@kalmbach.com

By Steven Otte

Is there a way to fix intermountain fly height car trucks? I've taken the trucks off, only to have the trucks and wheels come apart. I've tried cyanoacrylate adhesive (CA), to no avail. Any suggestions?

Daniel Lipsky, Ellicott, Colo.

Intermountain's 40′ I-cycle trucks are two-piece assemblies. The side frames and bolsters are one piece; the truck frame is a separate piece that fits over pegs on the bottom of the bolster.

Group Technical Editor Cody Grimm recommends using Loctite's Plastic Bonding System to repair the trucks. This system includes an activator to prime the glossy surface, make room before applying the glue. (Don't make a habit of using nylon or plastics when glues won't work out.

But if you don't want to go through the trouble, replacing the trucks is a simple and inexpensive solution. You can get replacements from Intermountain, Micro-Trains, and even Tangent as a truck or assembly, instead of inserting and replacing a screw.

I'm sending you a picture of my 4 x 10-foot HO scale layout. As you can see, there are wide gaps between the subroadbed and the base of the layout. What suggestions or pamphlet do you have that can show me how to fill in these spaces with realistic terrain?

John Dorsey, St Petersburg, Fla.

We've certain areas different such support for modeling terrain at least once or twice a year. Rather than make you track down a bunch of issues or find the techniques we prefer, I'll suggest you head over to our Kalmbach Hobby Store (www.kalmbachhobbystore.com) and be sure to grab a copy of How To Build Realistic Model Railroad Scenery, the Follow Me Down Train. This book covers dozens of scenery techniques in detail. We can't cover building what's details fully here, but it's the first area of your layout, as well.

Beautiful color makes our 4 x 10-foot HO scale layout running more fun, but needs a little information to fill in the gaps.

Digitrax

Introducing

ZEPHYR EXPRESS

Zephyr Express, the Fast Track to Digitrax Complete Train Control

- 1.3 lang Location Command System, Remote & Throttle
- Color 1.4" LCD Screen
- Large Backlit Keypad
- Runs up to 10 Loco addresses and Throttles
- Integrated DCC Computer Interface
- Control lights and sound with 24 functions
- Simple hot-fly with Easy to read display

Find out more at www.digitrax.com/dcc01

$131.00 MSRP

Holiday manufacturers offered HO and N scale boxcars decorated for each 50th state's anniversary. This modern were based on this prototype reefer, which was painted in the reappointed honor by Wisconsin Central.

I have an HO scale Wisconsin Central 40-foot boxcar. I believe it was made by Walthers and is numbered WC 20172. It's decorated for the 50th anniversary of your magazine. Was the reason a Walthers model? Would you happen to know the original price and stock number?

Jon Tolley, via Facebook

Here's a list of cars that you know that by 1991, the Wisconsin Central decorated in 21 scale boxcars with one 50th anniversary commemorative logo. It was also numbered WC20172. Models of that car were offered in both HO and N scale. The HO model was a Model Die Casting Reproductions model, but Walthers (the Reproductions line was purchased by Walthers. The original part number was 7180. Though Walthers carried boxcars in the 1990s, this was a limited run offering, so it didn't appear in Walthers catalogs of the day. But similar boxcar decals boxcars sold at the time were priced at $5.75. (That would be $9.86 in today's dollars.) These cars are extremely scarce and be found at railroad swap meets and via eBay.

I'm going to build an HO scale city but not Wheaton HO scale?

Joseph Cordaro, Wichita, Kansas

Yes. You can have the Wheaton and Hamilton cars in scale sizes fall between 1:72 and 1:64 scale. Also, be sure that the wheels are usually one of scale to exaggerated for appearance. Model train wheel sets is simply of scaling, tolerance wheel to match popular model railroad scales. Look for products from makers like Jatha, Classic Metal Works, Walthers, and Woodland Scenics, as well as European firms including Roco, Fleischmann, and Minitrix.

BACHMANN'S TOP DEALER
BACHMANN HO
E-Z TRACK
BACHMANN SALE
1-800-541-7018

By Jim Kelly

How do you keep prices low? Volume!

Jim didn't need a water tank, he needed the water tank, and Shapeways came to the rescue. All photos by author

In the back of Yellowhugh, I did, once the crews made a double track main line, work a steam era traditions Pacific of 4,000 gallon water tank. It was brought in by train from another for pick up the just must often a steam curmudgeon destroyed by predecessor on April 23, 1952. Widowed a little short had a big problem in the tank drew water as the town's water supply.

Also the SP support crossing recent the rail road demand the tank to the town, and today it stands in Redmond Park, as nostalgic, park-d green grass and large trees to this high desert mountain town.

The water tank is an ancient classic to see because a model of it belongs on the N scale railroad.

I'M A FIRM BELIEVER IN THE WISDOM OF THE MASTERS. THEY'VE BEEN THERE, DONE IT, AND KNOW WHAT THEY'RE TALKING ABOUT. I'VE ALWAYS BEEN GUIDED BY THE BELIEF THAT I'M NOT SMARTER THAN ANYBODY ELSE.

— Walt Disney

so in the year 1980s I was figuring I'd have to scratch build the model and wasn't looking forward to it, so I'd got plenty of rubber grey tank to keep me busy.

Fast-forward 40 years. Finding those dusted-off memories, I'm still a consistently self-disappointed individual. I was hoping I might even find a kit, just much to my surprise found something was better: a ready built model – paint it and I'd be done. The photo shows the out of the box model from Shapeways (www.shapeways.com), a 3-D printing service.

A wholly new way. This is a 3-D printed model. That is to say a model that was printed by a machine that lays down thin bars upon thin bars of plastic as a nozzle moves back and forth, following instructions from a computer aided drawing. It will print glycols. Think of a laser line printer that keeps going back and forth and the paper moves at morning on.

Shapeways is a company that acts as a facilitator between the person who provides the drawings, and the end product. Shapeways offers this, in the [illegible] article in the May edition 2014 Model Railroader.

What is even more about this for someone like me, who has no desire to learn CAD, and perhaps even the objects in that Shapeways gave like a new birthday for those who want to make the product in their own and able to the general public.

I was able to find this empty model with the exception for 1 less 4 liters, or 16 fluid or 34 cubic cm. $68.24 plus $4 shipping. Some of my friends thought that was a lot to pay for an N scale water tank. After all, good plastic water and tank are available for considerably less but the whole point is that this is not just a water tank. It's the quality water tank I wanted.

Some readers may question why the model has an open "bay that's because the prototype didn't. Water runoff on the tank was delivered via underground piping to water columns beside the track.

An opportunity for N scale. N scale prototype specific accessories are hard to create by just because of scarcity size. Modelers on HO may have to shave to 4 by about the to use. Not only do you need manufacturers make them for prototype of other eras, the more enthusiasts, small manufacturers, and the national historical societies have help fill the gaps.

Looking over the Shapeways online catalog pages, I'm surprised to not have many N scale models on offered, especially for locomotive boiler shells, rolling stock and interiors. I don't say that needs on prototype locomotive but it seems to me that experimenters who like kit getting more scratch than ex-cept to what we were.

N scale's small size gives it an advantage in 3-D printed models. The company prices its offerings for the volume of the material used to make them. Which means that we small N scale folks are going to be relatively inexpensive.

The sole object in 3-D I've recently right there the volume

tanks include the piping to carry the water to the trackside water columns or to the depot or freight shed.

tank through detail such as the posts supporting the roof are available in mini packs with 4 in printing.

of an N scale equivalent. This doesn't accounts needs that is will use right trains as much as walls and other components can be proportionately shrunken. Still, I'd guess that an HO model would cost five or six times as much as the same model in N.

It seems to me that the structures that the model trains, signal towers, cooling stations, sending towers, and other small structures are the products at right prices for those of us who like our needs in the smaller size.

And modelers who have the 1,417 3D's and more can really enough money in you for here were model and perhaps buy another thing or two down at the hobby shop.

IXPO

LARGEST HOBBY SHOW IN THE COUNTRY

OVER 600 BOOTHS!

Model Railroad Speedometer

T&P & Associates, Inc.

We Handle the Details

FLORIDA'S LARGEST TRAIN STORE

H&R TRAINS

A few of the most unique stores in the world!

EAR CANDY.

Authentic ALCO Sounds!

SOUNDTRAXX

Tsunami

CHECK OUT OUR VOLUME REBATES

The More You Buy... The More You Save!

800-873-5393

Tips for building plaster cloth scenery

We've found plaster cloth a handy tool for both original construction and modification work on our Whitecliffe Marine & Troy layouts. Here, Cody Varona moulds the material dry and then sprayed it with water to activate the plaster so it'll harden.

Plaster cloth is a commonly used construction material found in many commercial products. It was originally made as a bandage product that doctors used to apply casts after they set broken bones. Sculptors began using plaster cloth as their ceramic tends, and it didn't take long for wargamers to discover the medium was suited as a scenery base.

Plaster cloth consists of a porous, loosely woven gauze impregnated with a thin layer of dry (but setting) plaster of Paris. The dry-applied cloth is inflexible and can easily be cut into manageable pieces with a pair of scissors. Dipping the plaster cloth into a pan of warm water activates the plaster while the gauze helps it together so the net piece is lifted and applied over a supporting base. This makes the plaster cloth easier when dealing to use than the typical wet strip dipped in plaster that's often used to make a scenery base.

Theory and drying processes of plaster cloth have several notional hobby and arts uses in the popular Woodland Scenics line of scenery products that includes the Scenic plaster cloth. Hobbyists also add several products made by Dollar Tree and Hobby Express. Many other brands of the material can also be found with hobby stores and art supply shops. These other sources sell the plaster cloth in a variety of different roll sizes, including 4x8 packages.

Applying the plaster cloth is a six-step process. First, some sort of structure is necessary to support the net plaster cloth as it is applied. Webs can be made of shaped cardboard, wood braces covered with screen wire, or strips of cardboard and masking tape. For flat surfaces, roofs of newspaper or packing peanuts can be piled up and secured with masking tape to create a full shape. Once the supporting structure is made, it's time to apply the plaster cloth.

Cover the track and terrain to protect them from strips of plaster. Then unroll the plaster cloth and cut the entire strip into pieces that are roughly square. Dip one piece into a pan of warm water and drape it over the supporting structure. Repeat the process as needed, overlapping the pieces to gain thickness and strength.

Dip a wet paintbrush or shaped tile edges and create a smooth surface. And don't spend a lot of time on detailing, as the plaster sets up quickly. It's best to build up several layers of gauze over the entire structure and allow it to harden.

The photo at the left shows a rock that reduces the mass of modifications. Eighty pieces of the plaster cloth shown are required over the section. If necessary, this can be temporarily pinned in place. Then use a spray bottle filled with warm water and a few drops of detergent to serve as a wetting agent, and saturate the cloth to activate the plaster.

Once the initial cloth has hardened, it'll be quite stiff, but many hobbyists take the extra step of reinforcing it with a mix (also an applied coat on hand). It's a great idea to reinforce the molded up terrain pan and supporting cardboard support log structure. Otherwise it will absorb moisture and begin to swell over time. At this point, the hard surface is ready for finishing with the wood (rock detail, ground cover, and foliage).

More information on this technique can be found in Chris Prom's book *How to Build Realistic Model Railroad Scenery*, 3rd edition, published by Kalmbach Books — Jim Hediger, senior editor

Stoney Creek series

In this series topic, Model Railroader will present railroad scenes that included how to build a 4x8 HO layout. Each included an Atlas® track plan and a corresponding scene showing how you can see where they were published? Rules that I have to stated to. I've still happened with the track plan and layout photos. John Allen (1963). Karen Kroll (1963)

The Stoney Creek #3 series by Jim Hediger layout builders have started in the project layout series you're looking for. An 4x8 layout we've just talked has included an inside track and have running scenes. The first-story series was published in the following issues of Model Railroader magazine:

"Build the Ex-L.A. Heavy Creek, Santa Barbara," January 2006, overview and assembly instructions, coaming strip.

"Build the Ex-L.A. Heavy Creek, Part 2," February 2006, modified floorboards and original 7-armstrong/1 control (OK'd) wiring for the outhouse.

"Build the Ex-L.A. Heavy Creek, Part 3," March 2006, grass mats, masts and main boom sheets.

"Build the Ex-L.A. Heavy Creek, Part 4," April 2006, scenery, appropriate structures, and other small details to complete the project railroad.

Back issues are available from Kalmbach's customer sales department by calling toll-free 800-533-6644, or at the Kalmbach Hobby Store website, www.kalmbachhobbystore.com. There's also a CD-ROM version of the Model Railroader magazine 75-issue collection (CD-12-MRArch—$39.95).

Handy homemade electrical connectors

White-wiring interior lighting kit: One of my HO passenger cars, I realized I needed a pair of small electrical connectors to join the wiring on the roof to the wiring in the main carbody. After thinking about it for a while, I realized that I could use short sections of red and red wires to connect the wires.

I soldered the wires from the carbody to one "+" terminal of each 93 volt, and then soldered the wires from the roof lighting to a pair of red wires. I gently bent the middle of the flat part of the red wires so this spot slid up slightly in an open gold terminal socket and keep the wires from slipping off.

I used dental tubing to cover the exposed wires and wired the wiring (black-to-black) perfectly. The connectors are somewhat large and clumsy and work best for HO-and larger-scale. Using smaller red and plastic will probably work on smaller scales. —Matthew Kimmel, Reading, Pa.

Remember: You will also $25 for submissions like Trainmaster modeling and layout, modeling questions and ideas to Workbench, Model Railroader magazine, P.O. Box 1612, Waukesha, WI 53187, or e-mail workbench@kalmbach.com. We regret we can't answer all the questions we receive. There is no payment for questions. Ties are paid for upon publication.

Cast your own tunnel portal

Union Pacific black 4-8-4 no. 8100 exits stepping through a tunnel on Pete Steinberg's HO scale Union Pacific layout. Pete made the rock model for the tunnel portal and liners from styrene, and he cast the parts with elastomer plaster. Mike Schafer/Kalmbach

...sure scenes that look to depict the east end of Waging Hollow (ostensibly on the HO scale Union Pacific layout, the track ...ssing into a small canyon and enters a ...tunnel. While many exhibits might have ...ilt-in portals that match those ...n the prototype's lore through the ...Mountains, I made my own.

...e time I thought about scratchbuilding the portals from styrene would be the easiest option, but I quickly changed my mind. Plaster does a better job of capturing the look and texture of real concrete.

I did, however, use the styrene to ...eate the inside for the portal and liners. Styrene is perfect for this type of work because it can be easily held in shape, as shown in the photos of the portal and liner builds, and then cemented into place quickly.

For many years I've used Woodland Scenics lightweight Hydrocal for rock castings. The material is easy to mix and carve, has a slow hardening time, and when dry (before it's painted) has a handsome range of shades. I found elastomer plaster in an art supply store. This plaster, used for sculptures and in the dental industry, dries harder than Hydrocal. It also can be removed from the mold just 15 minutes after pouring, meaning one can make several castings in one morning.

If you want models that are unique to your model railroad, try casting them. Cast plaster, with some simple painting and weathering, the plaster portals will look the best of most models.

More on ModelRailroader.com

Watch a video of trains running through the tunnels in Pete's and learn at ModelRailroader.com.

I started this build by making the jump from my paper keyvane shape. I reinforced the entrance with triangle-shaped styrene supports. The stripes of the material will blend nearly as shown in the airshaft spinning. I connected the styrene parts with Tamiya Extra Thin liquid cement.

Next, I made a mold for the runner that mirrors the same keyvane shape. I used clamps and a block of wood so the styrene would keep its curved shape until the liquid plastic vanes had dried. You can see the finished inner mold in the metal plastic.

In order for everything to seat properly into the middle area, they're finished. However, it's important to coat the molds with silicone to prevent the plastic from sticking to the styrene. I used a brand sold in Europe but supplied by such as Micro Mark and others, and various mold release products, but this silicone dry consistently before pouring the plaster. I mixed the proposed plaster following the instructions and poured it into the mold. With the plaster still wet, I ran a stick along all edges of the mold to make sure the plaster filled the edges and corners.

For the runner liner, I added less water to the plaster to make it more air bubble dense. The thicker mix makes it easy to keep the plaster in the curved mold. I applied the plaster with a spatula.

The castings hardened in 15 minutes, and ran to concrete after 45 minutes. Once the castings were dry, I cleaned up the flash and lightly sanded them with fine grit sandpaper, giving the plaster a concrete like texture.

I wanted my tunnel to look like it has been around for several years. To achieve this look, I started the entire process with weathered grey cardboard. I made using Woodland Scenics Real Umber and Slate Grey liquid pigments.

Before applying the washes, I dipped the castings in water. If you apply the washes to dry castings, the mouldpigments soaks into the plaster, making the castings look too dark. It is easier to control the color intensity of the plaster by damp. I applied the wash three minutes before I set the castings aside to dry. I then used a brush applicator to apply black powdered pastels around the corner entrances as shown in the bottom right photo. This simulates the soot stains on the concrete from diesel exhaust.

To install the tunnel, I first positioned the portal on the layout and ran a bed track of loaded double-stick foam and pins cocky through it. Once I was satisfied that there were no clearance problems, I secured the portal to the layout with lightweight plaster. With the portal in place, I then installed the liners using more lightweight plaster to cement everything together and let it all dry thoroughly.

Now, with the castings in place, my track ballast and the layout in dust through a typical Tehachapi tunnel.

After years of hard work, the HO Scale TurboTrain is finally leaving the station! Last Autumn (shown) a ski route from our factory at press time. The remaining paint schemes will arrive over the next few months. We have decided to buck the "sold out before it arrives" trend. If you haven't reserved one already, you can still order the TurboTrain after you see it at your hobby shop. Factory-equipped with sound in both powered locomotives, the TurboTrain will work on DC or DCC. You can purchase extra Intermediate Cars to make a complete train up to 9 cars long!

NEW! You can now order scale-length diaphragms for your TurboTrains. These are meant for very tight curves or display models, and have prototypically-sized folds. #1000000 — $10.95/pair

#1000001	TurboTrain Power Coach (AEM-7) (2)	$449.95
#1000002	Additional Intermediate Car - Turbo Coach #[illegible]	$149.95
#1000003	Additional Intermediate Car - Turbo Coach #[illegible]	$149.95

#1000004	TurboTrain Cab Power Coach (AEM-7) (2) - #[illegible]	$449.95
#1000005	Additional Intermediate Car - Turbo Coach #[illegible]	$149.95
#1000006	Additional Intermediate Car - Turbo Coach #[illegible]	$149.95

#1000007	TurboTrain Cab Power Coach (AEM-7) (2) - #[illegible]	$449.95
#1000008	Additional Intermediate Car - Turbo Coach #[illegible]	$149.95
#1000009	Additional Intermediate Car - Turbo Coach #[illegible]	$149.95

#1000010	TurboTrain Cab Power Coach (AEM-7) (2) - #[illegible]	$449.95
#1000011	Additional Intermediate Car - Turbo Coach #[illegible]	$149.95
#1000012	Additional Intermediate Car - Turbo Coach #[illegible]	$149.95

Our new HO Scale **"Ideally Wired" Telephone Poles** shown in the photo are also arriving. Videos of the TurboTrain and the Poles can be viewed on our web site: www.rapidotrains.com Click "Audio and Video" in the menu on the left.

Want your layout to be Next-O? Ask for Rapido!

BAD ORDERS

"Operational Opportunities"

[illegible]

"Challenges [illegible] opportunities, come," as the owner of an operating railroad, hearing this almost cannot see an image because something has gone down the middle of an operating session. While we all seem to maintain our layouts in fairly well problem-free levels, when does differ between us is how we handle problems that crop up during operating sessions. While some layout owners are more than content to bring the layout to a "shutdown" to resolve the issue, another problem, without having to wait that acting by a more prototypical manner as well as other interesting element to the operating session — this keeps things moving without having to wait to address a simple problem that could wait till after the session has ended.

To get an idea of how the prototype handles these issues let's look at the concept of many railroad maintenance forces, which, unlike our small-scale roads, have separate departments responsible for maintaining and fixing things.

- Maintenance of Way (MOW) or M/W is responsible for the right-of-way and track structure.
- Maintenance of Equipment (M/E), sometimes called the "car department," handles rolling stock and locomotives.
- Bridge and Buildings (B&B), the name says it all — they handle the structures and buildings along the right-of-way.
- Communication and Signals (C&S) is responsible for all the wires in the poles, telegraph, and signaling systems.

Using this structure, we can now begin to think more like the prototype. We accomplish this first by identifying issues into one of the four maintenance groups then implementing procedures for reporting and repair, rather than just running to whatever volunteer operator calls the help. This may seem excessive for a model railroad, but once a system is in place, it will increase operating pleasure while simultaneously allowing the layout owner to participate in the session more than only have some time up during a session.

For instance, let's say you're the owner of a railroad, hosting a regular operating session. Overall, this is a very smooth operation, but we've had a few instances between work sessions where we've found that one of the participants [illegible] Operating rules require everything be handled by the dispatcher, so the crew refrains from calling for the Chief Superintendent. The dispatcher makes a decision as to the course of action, generally by observing the situation.

Is this something that the crew can repair?

- Can the crew be instructed to proceed safely to a distant siding?
- Should the car be set out on the repair track to shift it?
- Will the bad order need to be set out immediately to make repairs?
- What actions will cause the least amount of delay to the road train?

The most likely source of automobile accidents could be using these procedures to set a car at the nearest available siding to repair/release. A defect card left with the car informs the Car or Craft Department Supervisor of the required repairs, and the train proceeds with minimal delay.

In another scenario, let's say a car does not show the bad order status until the

Above: When bad-order slips arrive, dispatchers have to figure out how to get the car repaired and back in service. Ideally, the dispatcher should be informed of the damage before the car arrives.

prototype, a driver that does not allow required valve appliances when pressure a warning on the car's home shop because the car cannot be loaded until it's repaired. Translated into world terms, we can apply this protocol to all sorts of devices, such as missing drivers from bumpers, inoperable panels from automobiles, car side ladders and brake wheels, dirty wheels and journals, or bearings damaged once a train has left its originating terminal. Because we handle each car numerous times with each locomotive changing out and back in, we can consider inspecting that car a nine-location multiplier (such as a coupler or wheel) a locomotive change-out, or a train-location change (a car's position within the train) as "home shops" for carrying most primary repairs on undue RIP (Repair In Place) work.

Now that we've looked at a couple minor issues involving railcars, what about problems that may have more impact on an operation — something such as a truck defect? Any defect should be reported to the dispatcher who can then try to assess the situation and direct a course of action based on several considerations:

- Is the defect on a unit ready to be sold?
- Can/can it still be safely moved (some defect markings)?
- Can this track be taken out of service without adversely affecting train movements?
- What caused the defect?

A Does this defect require immediate attention?

On my own New Jersey Division, for one, we have several trains operated as "work trains," and for a work defect, the dispatcher will call one that's been available (perhaps) to service the problem. Acting quickly, the dispatcher instructs the train on the course of action and records the information on the dispatcher's log. One railroad recently issued a system order that repair cards made after the station closing must arrive on the train's conductor's desk while proceeding through the office territory. If the situation requires more drastic measures, such as removal points that will use any material the railroad may be asked about with car owner values out of service and repair cards made after the station.

Whatever protocols your division to handle these incidents, crews must determine their movement defects are addressed in a timely manner. As the owner of a large railroad, I can assure you that I consider, immediately every time, that each time, simply telling me that the coupler is not that switch sticks, and/or brakes are gone. Maintaining our fleet is most effective. We can do easily determining "BAD ORDER" slips that can be easily made on a home computer using a spreadsheet program such as Microsoft Excel.

Bad orders that are a cost from the all formats with individual lines for railroad/ownership, and lines and locations, or sometimes will direct us to the location of equipment to be repaired. An additional line for a detailed defect explanation will call in the specific

Left: Typically, equipment owners have specific guidelines regarding acceptable repairs to their cars. Working with a railroad's car department can help ensure that your railroad's bad-order slips are complete and accurate.

problems, such as a ill-and-complex spring, inconsistent wear's rust, switch points, and so forth. On my own clothes cards, I have included many more details with reference to those MRP on various locations, partial for informing local crews that a delivery can be here to coordinate a pickup service, immediately answering why we approach to visiting in the customer plant. Similarly, each delivery also got their own additional detail — time and names and also for each interval of service enables me to direct further questions about a truck ticket to the "work in progress" who initially created the ticket.

The next time you have the call for the repair technician, consider how you handle your own bad orders. You may find that

RFID Overview

By Don Dailey, Photos by Keenan Photographs

great SCENES

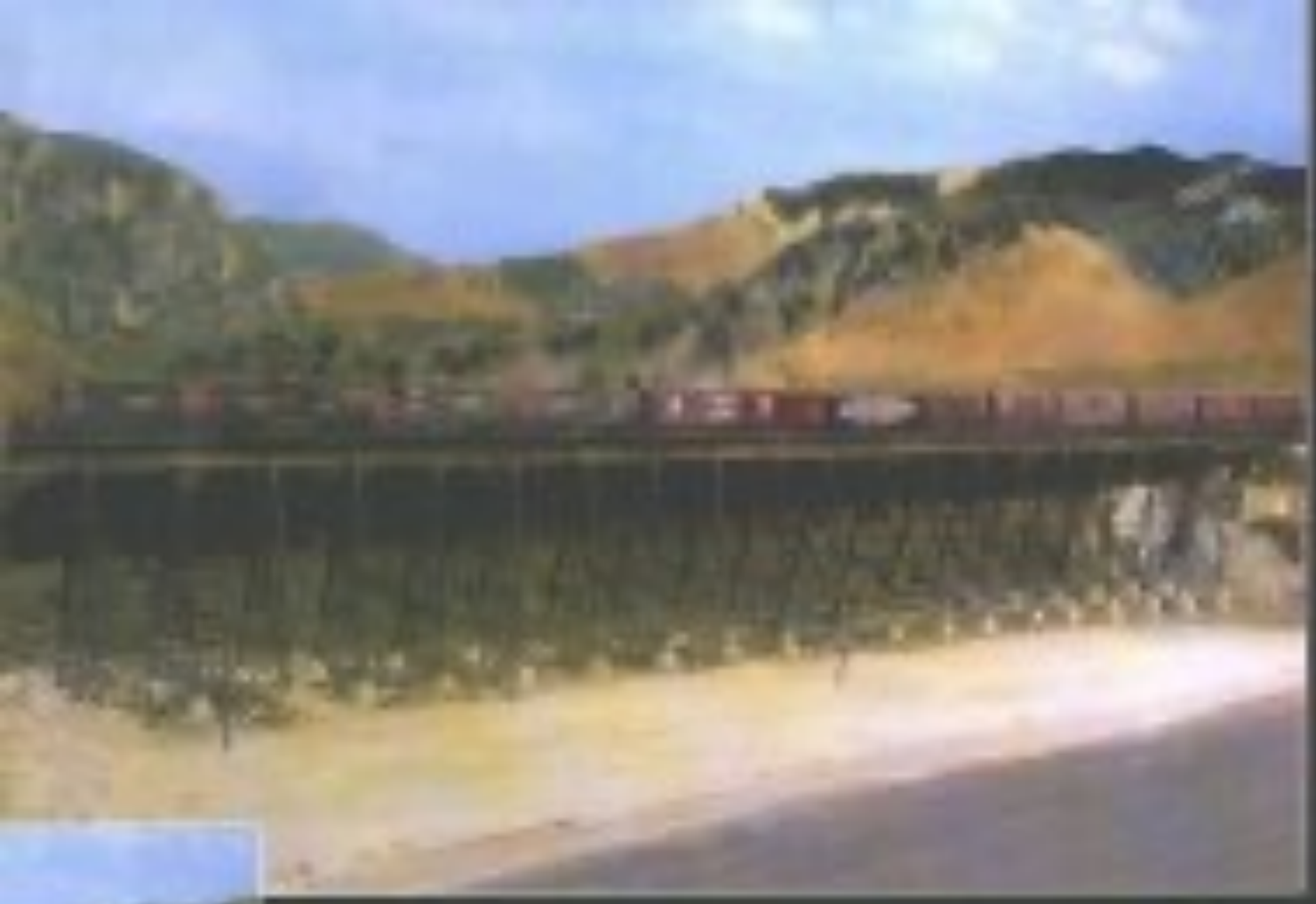
Photos by Nick Hawkins

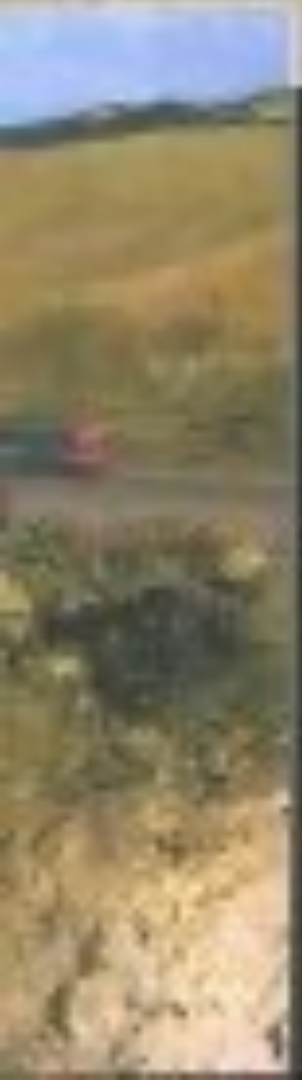
Right: 4 x 2.25cm. "Pink on the Southern Pacific's Coast line" Size #10 "shooting weekly timetable" perfect companion - making the most of the Easter outing and ensuring the large tracks stay #10, the most daylight. Not pictured

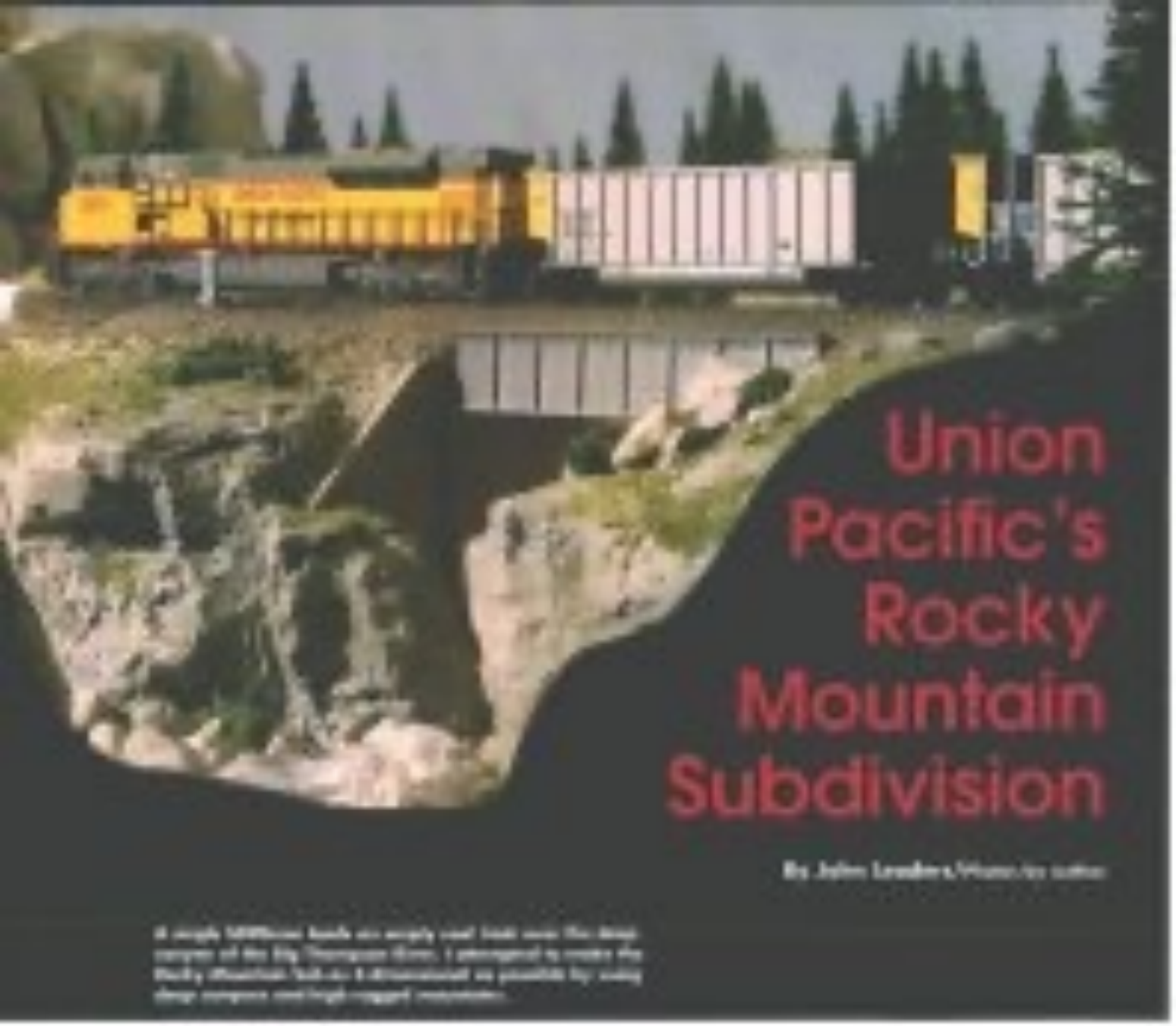
Below: 4x10 Glass Size #8 Kit. "The Coast Mail" is coming soon - watch out! Like Hammer Horrors and Zombie

Our scenes and more are the work of Charlie Stone. She is quite the project and it has taken the time to build a real collection. Small and simple work out, but goodies indeed. LED and APC work well all the installed switches shortly matching a Kamtec 5.0 point locking solenoid. The rolling stock is customised and powered by photos. So far the collection is largely pre-1960 but I'm sure something will change but Charlie has plans to model the Seven Nine locomotive.

Charlie always wanting on his railroad and the layout will when it worked. "This is a labour of love and I have no idea how much time he has invested ... but he considers time invested as part of the enjoyment" Steve Says







Union Pacific's Rocky Mountain Subdivision

By John Leander, Model RR Scenes contributor

A couple 5000-foot hauls on a single road limit over the steep canyon of the Big Thompson River, I attempted to make the Rocky Mountain Sub as a dreamroad as possible by using steep compass and high-ragged mountains.

When it came time to design my second layout, I was faced with a few challenges. I have a passion for long unit coal trains, and I have a growing fleet of modern BNSF and UP diesel locomotives and, realizing that most layouts have a layout, I wanted to run several dimensional 4- x 12- foot the crossroads on this layout I had an eye on allowing the layout to be portable for transport to several model shows. Also, I wanted to choose a theme. I have always been inspired by rugged mountains scenery and wanted to build a layout with a Rocky Mountain theme which, when not overshadowed by the numerous size of trains, I was introduced to mountain scenery, so I had never attempted anything like it. However, I felt that this layout would be a great way to experiment with new scenery methods and gain some modeling experience.

I enjoy watching trains of trains, and in order to avoid the simple mainline appearance, I chose a main around, consistent design with gentle flowing curves. I decided on a single mainline which would accommodate mainline regions and control a passing siding to allow for some interesting operations with multiple trains. I also wanted a short siding for maintenance of way equipment, or as a place to store helper units. I also considered future expansion, and considerable effort to interchange tracks that would allow me to run both BNSF and UP equipment on the same layout. In order to operate both Atlantic coastal liability to a small area, I selected a minimum radius of 22". Later considered the possible use of double tracks to be used as relief to ensure adequate overhead clearance on the mainlines. The mainline engineering grade will permit I selected the layout to be reversible since units sides in order to maintain the moving engine. Rather than using a control backdrop to split the layout into two areas I would attempt to create a partial curved divider with large mountain scenery. My grievance to walkthrough tracks as accomplishes when I also struggle against some grades against a background of

Rugged terrain and high elevations make most of the Rocky Mountain Subdivision area accessible only by rail or on foot.

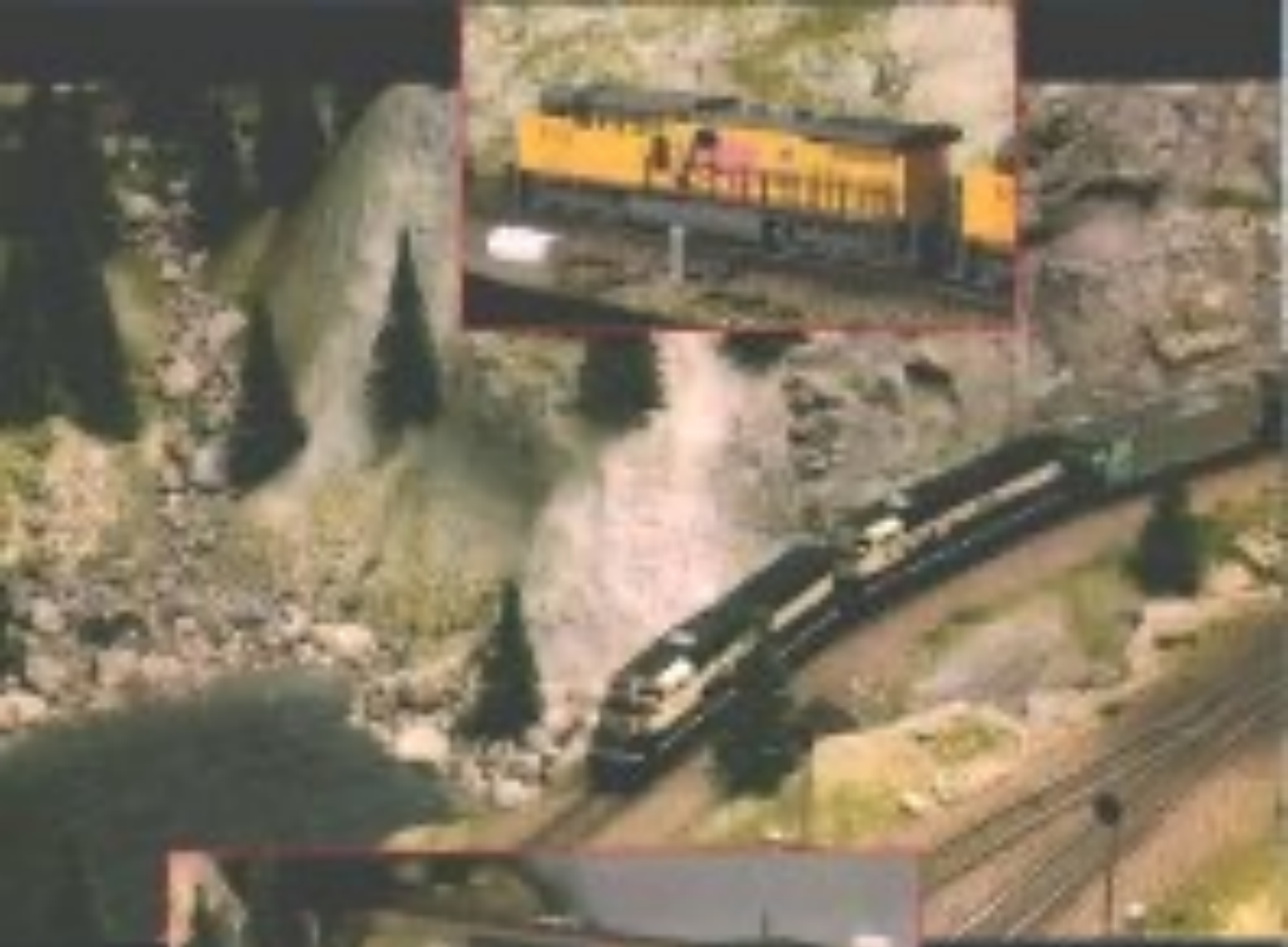
scenic and rugged mountains. I pondered whether this was possible in just 48 square feet.

Construction

I began construction begun on the Rocky Mountain Subdivision area after the beginning of 2013. I used common modeling techniques such as open grid benchwork, cookie cutter subroadbed, and plywood scenery to yield a very strong yet lightweight structure. I used other construction techniques such as using acrylic craters to add color to areas of exposed rock, and various colors and textures of ground foam to represent vegetation. Several pieces of photo mural are also used to make the surface of the lakes. There are approximately 200 trees planted on the layout, and the landscape at times looks as mountainous terrain as a model train layout. Inspired by the snow sheds located on Southern Pacific's Donner Pass, I built similar structures at the mid- and rear boundary. The smaller size of this layout allowed me to pay more attention to detail, and as a result, I was able to model both sides of the tracks. Details including prepared switch locations, scenic sections, and working signals.

Conclusion

I learned a great deal from building this layout. I learn from great locations across a variety of scenic elements and popular layouts. The Rocky Mountain Line work about one year for subjects, and this very satisfying to have completed project. I would encourage anyone to start small and build a project that can be completed in a reasonable amount of time, regardless of how much space you have. I also found that maintaining to maintain the tracks would be a main obstacle while I was still to construction was a good way to maintain, adjust, and rebuild a goal to work towards. Going forward, I will continue to add various details, and simply enjoy operating trains. I am already planning for my next layout project, and hope to try a new technique and release my modeling experience.



Layout Facts
Size: 72" x 48" rectangle or 6 x 4 feet
Configuration: wide-curve single-track, passing siding, HO/N Helper siding, main/siding separation siding
Theme: Rocky Mountains, Union Pacific 4000 class 4-8-8-4
Benchwork: 1"x3" open grid, 1"x3" planned curves with sub-roadbed 1"x3" legs on risers
Roadbed: 1/2" hardboard glued to bench work over cut glue chunks (only on benchwork extensions and risers)
Track: Atlas code 55 flex, #7 turnouts controlled by Tortoise switch machines
Minimum Radius: 24"
Grades: 2 percent throughout
Scenery: half-way HO scale cork
Backdrop: single coat tint with 4 subtle blues on curved 1/4 inch thick tempered hardboard
Scenery Base: Sculpted using hardboard cut-outs over foam chunks and plywood

Snap Thomas installed 28 hardware hangers from the main shown here to mount an A-grade board to smooth the surfaces. Mark Orr flange lubricator beneath the mounted unit.

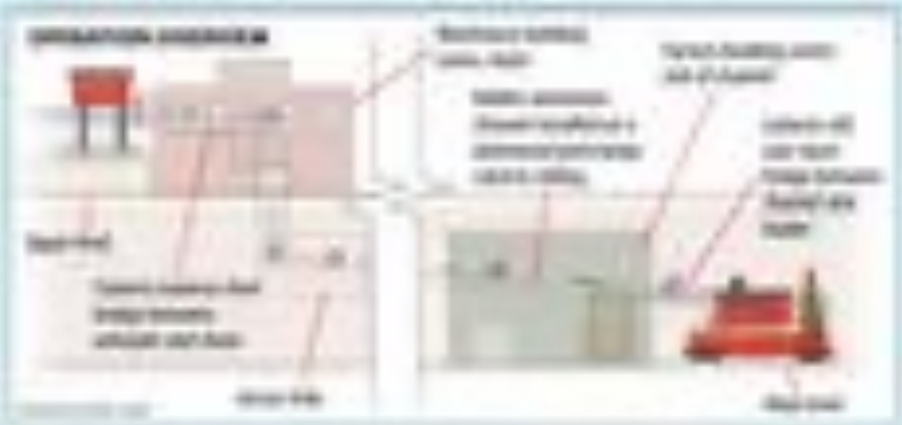
Editors' Helpful Hints

Before the first unit of the train negotiates the distinctive valleys of Spencer Gardens, gain familiarity with the locomotive's operating characteristics on a flat section of track. Mark's track system is a useful additional reference. ▮

TRY A NEW TRICK with two LIONEL ACCESSORIES

LIONEL'S NOS. 342 COUVERT LOADER AND 345 UNLOADER CAN WORK TOGETHER – EVEN WHEN THEY'RE LOCATED FAR APART

Story and photos by Bob Hunsaker



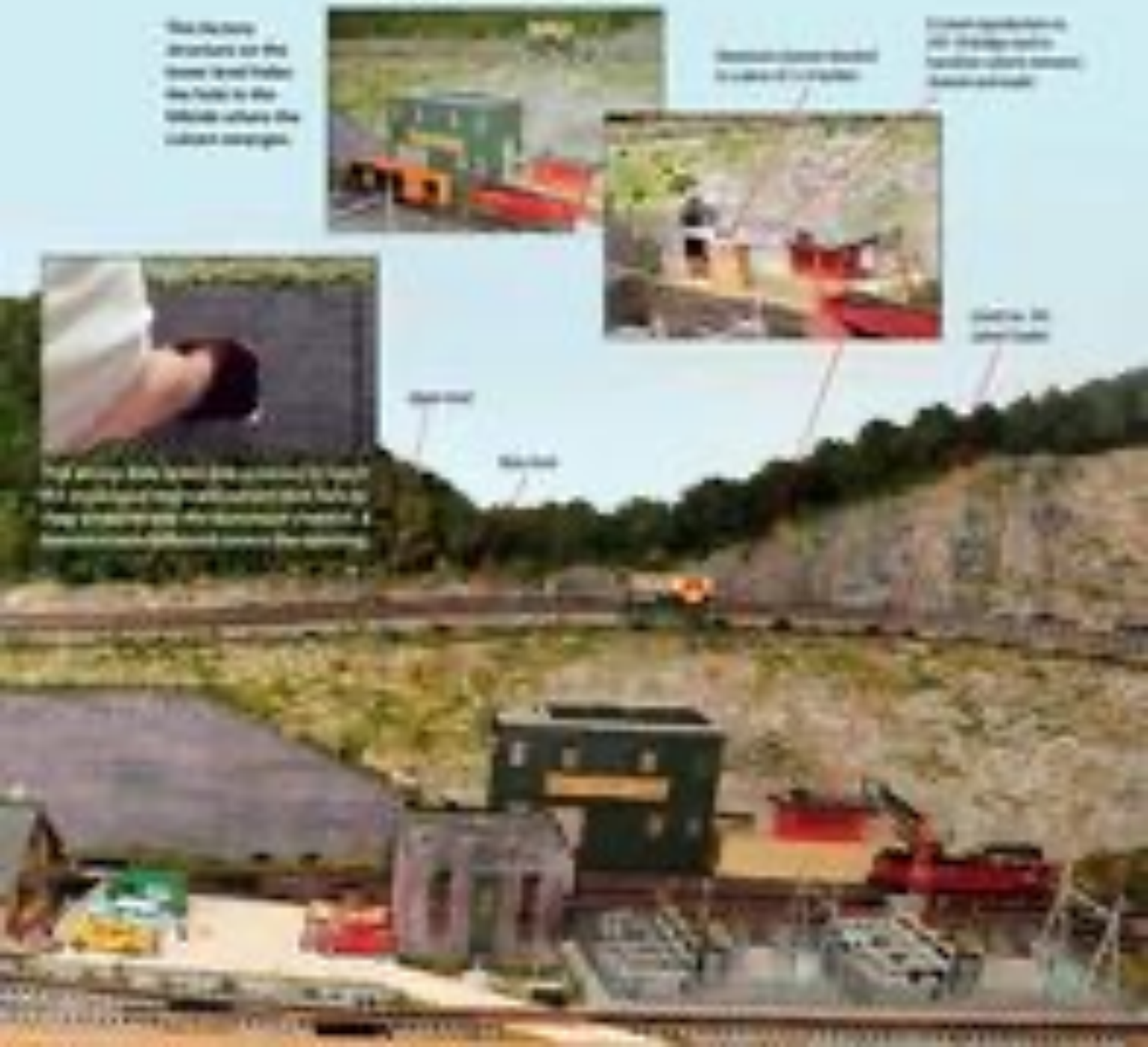
On all the rig racks surrounding American trains and accessories, the one closest to the journey of Lionel's own, 1932 cabover loader and 1931 caboose mentioned are the most. Exactly why did I need design flaws now spanning my desktop accessories to be placed directly adjacent to each other? Where no logical answers emerged, I decided to break from tradition and try a different approach to pairing these two favorites.

As depicted in the photos below, our 1:1 x 36 thick network the walls (1 gauge across) has an upper level (1) section above the main level. I placed the caboose on the upper level. Then, ignoring standard practice, I elevated the loader's bin away on the main level.

Rather than connect two accessories by means of the short bridge (part no. 141-14), I instead chose for unwilling an 8 thick length of aluminum channel hidden within the hillside. After a solvent has been lifted from a loaded gondola, it rolls down the unloader's ramp, over the short bridge, and down to a sacrificial chute that drops it below the upper level. The aluminum channel then catches the cabover and moves it through a secret door in the loader's plastic ramp.

(I took the upper and lower ends of the cabover dropping operations. I've included removable warehouse structures to disguise the cabover's built chutes, channels, and supports. I allow no cabover ally solve these work where their drop through the chute, so I also built an access hole in the leftmost retaining wall to easily reach in and set things back on track.

After operating these paired accessories at the moment, no [we're imagine the original, short-sided cycle today anywhere near as much fun. Now, if there were only a way to make similar improvements to the Talgo Liner! Ha. The Loader Station



This factory structure on the lower level hides the hole in the hillside where the cabover emerges.

Aluminum channel inserted in a piece of 1 x 4 lumber.

2 insert speakers in old vintage radio to handle cabin sounds. Volume and mute.

Load no. 3/4 panel loader.

Upper level.

Main level.

Rail up to help prevent the locomotive from falling off the elevated track. Rail is up-flag enough to stop the locomotive's wheels, but low enough to allow the locomotive's pilot to ride over it.

READERS' GALLERY

— Garden railway scenes from around the world —

ABOVE: Since he started reading Garden Railways in the 1980s, Jack Gilyard has always loved other narrow gauges and scales as well as his own. One example was a photo from Hank Crawford's Forest Garden Railway in Edmonds, Washington (January/February 1998 GR—see inset). Jack always wanted to recreate a scene like Hank's: that of a train going away on a trestle, which he did on the corner of his yard as he completed railroad in Hillsborough, New Jersey. Jack's equipment is all scratchbuilt on 1-inch scale, which runs gauge 1 track to represent two-foot gauge. The pictures were taken with a Canon EOS Digital Rebel T3i (EOS R camera.

FOCUS ON CLASSICS

Identifying versions of Lionel's no. 282 portal gantry crane

INFORMATION TO HELP YOU COLLECT THIS OVERLOOKED ACCESSORY

By Joe Algozzini and Roger Carp

Avery 350 crane was packed with cuts on pushing was damaged during transit from the factory. These cardboard inserts kept the controller and running plates secure.

By removing the cab from the 350 packet gantry crane, we can give you a good look at the unpainted cast-iron base that held the cab and boom assemblies in place. Cast screw hold the gray-plastic platform assembly on the top of the rotor shaft. Three rollers, initially black, were become silver and swiped that way through [illegible]

The magnet, which Lionel discovered for the first production run of its postal gantry cranes (left), was given a shiny cadmium finish before the end of 1954.

When Lionel brought out the no. 263 postal gantry crane in 1954, designers in the company's engineering department elected to use a black plastic cab that was painted black and featured a gray plastic windscreen glazed in by roof cloth. "Lionel Lines" and "Railroad Use" markings were heat stamped in white. The 263P version of the accessory was introduced in 1956. It was equipped with a black plastic cab that was painted black with a molded-in black windscreen. The 263P gantry crane was heat-stamped "MT 263P" in white just before "Lionel Lines" origin.

The Railroad Line no. supplied boxes during that time era, although little boxes were printed and used to just displayed for accessories. Two boxes changed and a few made.

The new die-cast boxcars, decorated with the period gantry cranes were painted with black lettering and had a 6.25 days. An additional Lionel established the format, the marking, and the drawings on these items.

For starters, Lionel introduced a Type III "Wings." It was retaining the small and raised ridge shown on the Type II. As both cases, please keep in mind that a combination of particular boxcar doors and period wings was possible.

Just like 1956, a variant can be needed to the colors and lower changes made in order to be in throughout the first two lines the second. The change had to be with the end of the same type was lettered. Now, a letter was interesting a brief replace the purchase with which had a single die.

Why did Lionel make the change? Knowing that both cars were had a single die, so Lionel decided that it was impossible — as this photo — to obtain good which and an accurate if an accident. Now, though, with the standard there had a single die, so the choice as to which not to source was quite obvious.

As a result, the cases case Type III cars installed on the top opposite the letters bread to accommodate the color and of the Type III were heavy, as a result to the cases are added as.

Another change involved to the decomposition of a box case. Up the no. 6562 (as 1956). The red and white was to a 6H very worked at the plant and no longer painted. All cars that was made on the rule at the former to no orange plate and the bottom was the same as the no.

Even as both cars started differ- ent for 1962 a lot was not covered to the box. Likewise the rule for a color case was wrapped two plans—the changing and the pulled, black, and brown. And it was 6562-11 replacing the 6562-25. The box have found known, there is the process we need to the rule to be made.

We have flaws—well, a few here and a "6-25" box, sometimes plans with a "6-25" and printed with black on blue lettering. Type III wings but should be most type of Type II wings that can't pass had a square edge.

The pack of a postal gantry crane remained at $18.95 in 1962. Lionel's name to close at a no. 263 was included with each of these accessories.

Mid-production

The [illegible] of the 250 in the conversion creating not a copy on the previous two rooms, although smaller, going from the number to 11 meters. A change of the values usually meant it [illegible] not a problem or had not known work.

But [illegible] was also known as a conclusion beginning the [illegible] of an area of work done and known as the process. So it shouldn't have been a surprise that in 1978 it necessitated a new number on the overall games [illegible] the [illegible].

The [illegible] Richard Lightbrook: "The new fundamental changes were in the accounting and pairing of the [illegible] and due to slight [illegible] which also involved revisions on the platform coating and platform assembly."

Although the visuals remained the same as before, a new Type B platform [illegible] was introduced. It [illegible] place a new Type B [illegible] [illegible] [illegible]. The platform was changed so parts [illegible] [illegible] could be [illegible] and [illegible]. Designers accepted the task to the [illegible] [illegible] [illegible].

[illegible] gave the original [illegible] for both [illegible], but plugged holes at the openings. A clear look at the rare parts reveals a faint outline where the [illegible] [illegible].

The [illegible] had their [illegible] [illegible] logo. One was covered by the [illegible] [illegible], and the other two were located on the [illegible] and right.

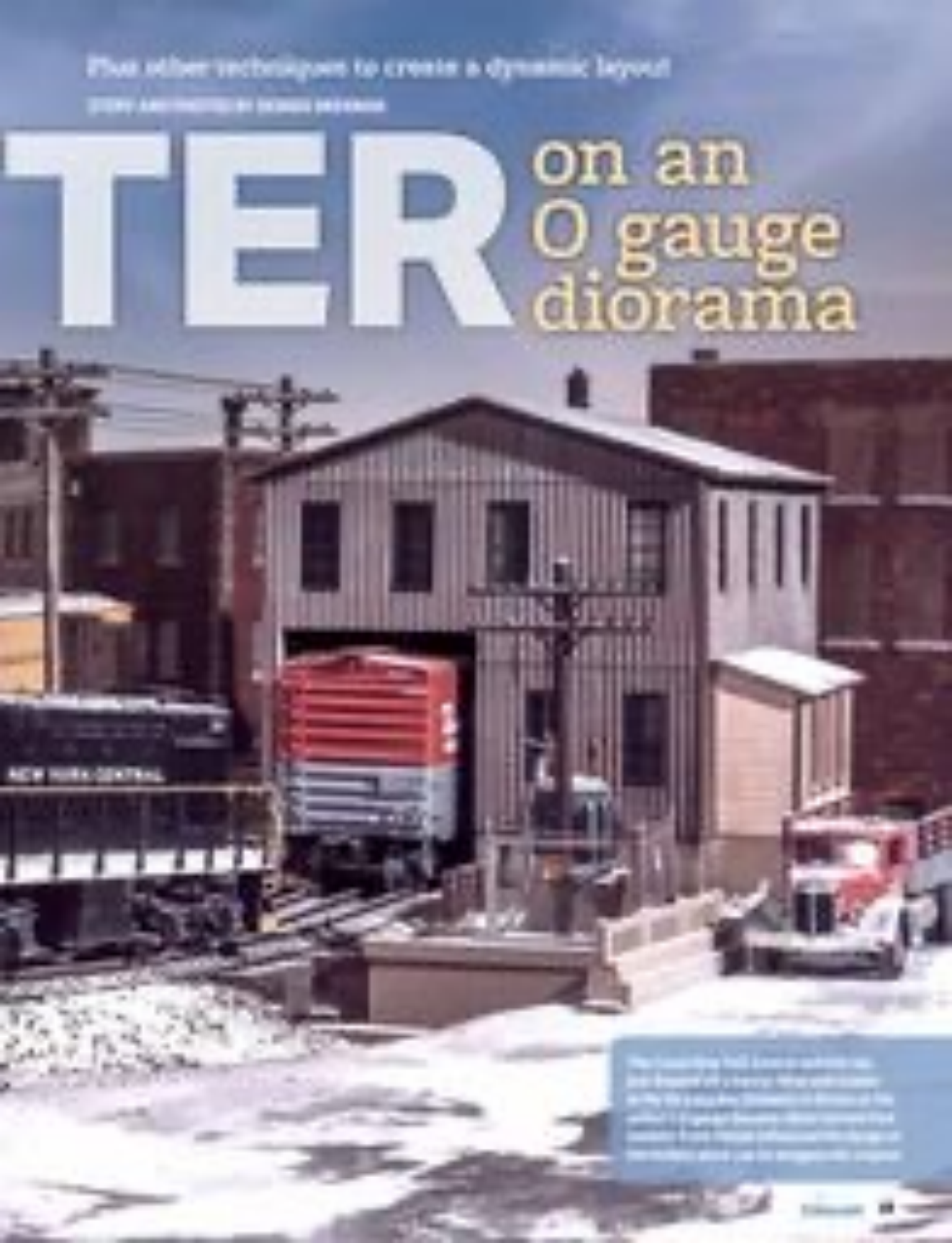
The [illegible] [illegible] [illegible]

Modeling WIN

Plus other techniques to create a dynamic layout

STORY AND PHOTOS BY DENNIS BRENNAN

TER on an O gauge diorama



1 The base of the diorama consists of three layers: two are 1/4-inch thick, and the other is 1/2-inch thick, all Presswitch pink construction foam. They were offset to each other and to the ¾-inch-plywood base with regular Elmer's white glue. The underpass is a modified two-lane bridge kit available from Hill Foundry.

2 For this area on the remote diorama, the author purchased a cut, 4-1/2-inch-square Bridge Hill model and surrounded by Hill Foundry's. He then modified it to fit snugly into the very right scene. The realistic look of weathered concrete adds visual interest to the platform. Dennis recommends modelers do so the lookout for small details that can enhance scenes.

W

3 **The OK Long Box Company uses on the bottom layer of hexes. Stencils cut out the logo here appear as cracks a pocket to absorb as per the building. The factory sits on a piece of cutting tile attached to a ½ inch plywood base. Framed with 1 x 3 inch pine. Vertical variations of the ground level as well as building height add visual interest to the scene.**

4 **The front range down to the lower level on a piece of cutting tile. The grade slightly ascends 2 percent. Stencils show realistic surfaces from Atlas O that have plastic bits**

the actual play was a gentle cross-country romp on tracks ... soon to be onto a wharf that smooth blue roll.

The small Atlas pine Semaphore ... was a happy accident. Instead of painting the sails on, I first color-photocopied the sails on a piece of paper to mark the first fold. I did it over the wood. I then stamped a pile of "snow" (instead of the decking I had to scrap).

Rather than recreate it all, I gently blew on it and the result was startling.

Painting ruins with color and light

The lightning, with the muted colors of the tracks and a cool contrasting sky, introduces the setting. The dust clouds also fading and gray around the horizon makes

I bought the Greenmax N231 Series 4P City Electric for a whole above. It was without an article by Bill and shared. Some to color. Almost a corrugated sheet over building for less than a dollar.

Planning ruins

Making it work

Staying in scale

5 Pieces of grid fixed, foam cut, and cutting jibs bring the scene's end with the module built around the Oh Long Bus Company. Pieces of cardstock match the track base to the impressions. The wood bridge is sitting on a slight angle as it was match the module.

Angled and visual interest

The design of two scenes showing what we filmed—track configurations through the layers of themselves, the immediate, and more. The people are very effective arrangement consists of a main line with a passing siding and several industrial spurs serving as different directions.

This adds operational interest and keeps the scene less upon what operators are seeing and participating up cars. Note how the tracks angle through the space, curving into the distance. Doing so creates a more dynamic look than having tracks run parallel to the front of the layout.

Diagonal lines attention tracks, streets, or structures, create depth. Look at the way plants and we have the angled road that lead your eyes into the negative space (and between the buildings). The line remains to straighter the tracks making all well you the distance.

Structures to with also enhances the dimensions of a scene. Placing the first, overpass slightly behind that area help set a different the urban buildings. It also let me add the descending grade track, which enriching walls, and a aural landmark.

The detail where I've placed the train now runs along the front of the diorama, and the scene's depth is enhanced.

> My inventive attention on a weekend at a planning/author attempt that feels "back to square." Undaunted, detail packs stacked into the scene.

and dips down to a tunnel under the tracks. Various scenes it swings back up to the main surface and runs the entire behind the factories on the other side.

The main tunnel and the tunnel are at opposite ends of the space. I think of them as "bookend pieces."

The industrial background buildings are kits (mine: Atlas O Commercial Class, Pola, Vollmer, and Walthers). I'll also point another name to you: Pujalt Efficient Scenery. My Architectural Modeling Company.

Where to position you yourself

I build this diorama as my workbench at home to make my place in into a secret hatch. I like working there because it lets me comfortably complete the scenery and place details around all sides of a small area. It built in as a layout, small spaces around for difficult to impossible to get to. It's also easier to finish all the wiring and lighting before the scene is installed.

To add the factory complex to the layout, I simply cut out the foam to make a pocket and glue it in.

By sharing insights into the creative process behind the scenes, I hope to inspire you to tackle that next project and grow. Until then, keep on modeling!

6 The lower levels on the diorama switch. Masking tape covers the seams, followed by paint and scenery. Scenic cutthrough the road way bridge with the Woodland Scenics Highway Overpass Roadway offering on two pieces of stripwood. Foam core board spans the gap.

7 After slightly beveling the edges of the ramp, Dennis applied three overlapping layers of masking tape to make the embankment. From after a coat of brown paint, the track can be installed. All that's left to apply is ballast and some groundcover.

Great Items from **ALCO PRODUCTS**

You need more **Economical** pulling power?

ALCO PRODUCTS

TAKE THE MORNING TRAIN

WALTHERS

From stock to show-stopper

Details and paint turn this Athearn AC4400 into a masterpiece

By Pete Swisey
Photos by the author

With more than 1,000 locomotives in its fleet, keeping up with the Union Pacific is a challenge! I learned how it handled an early version of a Union Pacific AC4400CW on the September 1998 Western Rivers excursion, and felt it was time to model a later-version, patch-and-paint survivor.

Union Pacific's units and the prototype AC4400CWs are very similar, there are minimal differences. For example, here, nameless here, high-mounted dash lights on windows on the nose (low, low dynamic brake grids (the early version has three), high-mounted marker lamps and antenna domes).

Detailing the cab

The grills on the right side of the Athearn cab are divided into four sections. Trim a sharp knife and carefully shave off the center divisions as in Fig. 1. Next, remove the nose door by drilling a couple of holes in the door and inserting into the door with a knife. Use the dimensions in Fig. 2 to make a new door.

Drill the holes for the wind tube handrail and for mounting hole for the handrail stanchion at the rear left side of the cab with reference. Drill and tap for the mark-time brackets just ahead of the locations of the lifted holes.

Place one pre-painted window in the cab and, like the front opening, draw around the glass with a sharp pencil. Cut out the opening with a knife as in Fig. 3.

Body and access door changes

As shown in Fig. 4, I replaced the Athearn radiator grill with a Details Associates grill by drilling a series of holes all the way around the grill, then carving between the holes. I made a frame for the etched grill from .020" x .060" plastic strip glued to the inside of the opening .015" from the top edge.

The grills on the model's dynamic brake section are too far forward. I cut a left-side grill and panel section from another Athearn body shell for the right side from your spare body. Save always the right side for the left side as shown in Figs. 5 and 6. Start by drilling holes and cutting away the material. Save cutting the grills from the second body. Trim and sand them to fit into the space on the first body shell, and glue them in place. Fill any gaps with body putty and sand smooth.

The cab access door on the left side of the hood has to be replaced by a door with a rail grill from the spare body.

Make sure there's access doors above the capacitor cooler box. Trim off the doors shown on the left side of the hood just behind the traction motors and smooth the area with a sanding stick. Then trim two pressure doors on the left side of the hood just behind the traction motors and smooth the area with a sanding stick.

Make sure there's access doors above the capacitor cooler box. Trim off the doors shown on the left side of the hood just behind the traction motors and smooth the area with a sanding stick.

Pilots, handrails, and body

Make sure there's access doors above the capacitor cooler box. Trim off the doors shown on the left side of the hood just behind the traction motors and smooth the area with a sanding stick.

Make the backbeds from .015" brass sheet. Trim them to shape and solder the pieces together as in fig. 6. Make a small U-shaped bracket from .010" x .015" brass that will solder the pivots together. Solder another bracket to the inside of the front end beams as the mounting points.

Drill out the two axle brackets and one on the back end of the chassis to the right hand side. Use the blade that came with the saw to cut the slots for the axle ends. Fit the axles with brass pivots and hand reamers. Glue the RH bolt axle dead centre to the two axle ends. Make knuckle pivot from .039" brass rod and pivot brackets from .018" x .015" flat bar.

Drill a hole in the blade for the handbrake lever pivot and fit the lever. Make the lever from .039" x .015" brass flat bar and file to shape as in the drawing. Make the pivot from .039" brass rod and solder it to the lever. Make the pivot bracket from .018" x .015" brass flat bar and solder it to the blade. Make the pivot pin from .039" brass rod and solder it to the bracket. Make the pivot bracket from .018" x .015" brass flat bar and solder it to the blade. Make the pivot pin from .039" brass rod and solder it to the bracket. Make the pivot bracket from .018" x .015" brass flat bar and solder it to the blade. Make the pivot pin from .039" brass rod and solder it to the bracket.

Truck sideframes

Drill holes in the end of all brass sideframes for the brake pipes. Glue rivet-shaped pivot stock across the front and rear of the sideframes. Glue the bearing caps from spare bogies on inside. If you have no spares, buy 3/8" RC Hob axle bearing caps. Glue the caps to the sideframes where the pivot stock is attached.

Make five square cross plates from .015" x .062" section strip and glue them over the sideframe holes on the left side of the truck sideframes and the right side of the rear truck sideframes. Make brake gear from .012" brass wire and make five small brackets from .015" x .018" brass flat bar securing the brake gear to the truck sideframes.

Painting the model

Meticulously file shaft, axle, truck side frames, and handrails, except the underframe handrails. Use according to the manufacturer's instructions. Glue the underframe handrails. Use a small amount of filler to fill any gaps between the underframe and the body. Use a small amount of filler to fill any gaps between the underframe and the body. Use a small amount of filler to fill any gaps between the underframe and the body.

Decals and detail painting

Bill of Materials

Adding Rolling Stock on a Budget

RUSTOLEUM
2X
ULTRA COVER
PRIMER
RUSTOLEUM
ULTRA COVER
2X
PRIMER

ON

Below, CNWC 40942 is shown in ordinary service on Kiel's Skyfly train.

Contributing editor Pelle Soeberg explains how he added more details to convert a Kato HO scale AC4400CW (also an AC4400CW-ES). He also explains how he added sound and micro-LEDs to the model. The inset photo, taken by Mike Hyhes, shows a prototype AC4400CW-ES with the antenna cabinets.

How to upgrade a Kato HO SCALE AC4400CW

Tips for adding antenna cabinets, a sound decoder, and light-emitting diodes to a modern road locomotive

By Pelle Soeberg ■ Photos by the author

During a trip to North Platte, Neb., I realized that I have had the time and opportunity to watch Union Pacific locomotives switch cars at its large locomotive facility there. Since I recently acquired a Kato HO scale AC4400CW (a U.P. unit), I added antenna cabinets, a sound decoder, and micro-light-emitting diodes (LEDs).

The nice thing about this project is the model doesn't have to be repainted. Just a small amount of touch-up work is necessary to make the new details stand out.

Adding the sound decoder and LEDs took a few hours, so it took my construction time to about four hours. Converting the Kato AC4400CW to an AC4400CW-ES that adding a sound decoder to a relatively new model present. The new details made a world of difference in the model's appearance, and sound helps bring the locomotive to life.

Now on ModelRailroader.com

Model Railroader magazine contributing editor Pelle Soeberg's HO scale sound-equipped locomotive is online on our website, www.ModelRailroader.com.

Step 1 ANTENNA CABINETS

Union Pacific's antenna farm cabinets aren't exactly what we commercial aerial users find some of the components they are. Parts that aren't available can easily be made from styrene, brass and plastic tubes.

Each of the model cabinets consists of three layers of styrene: .020" on the bottom, .060" in the center and .010" on the top, as shown in the upper left photo. Each layer is slightly smaller than the next, creating a stepped appearance.

After I laminated the layers with liquid plastic cement, I attached oversized pieces of .010" x .020" styrene strip along the top edge of the .040" styrene. See the upper right photo. These simulate the small lips found on the prototype. Once the glue had dried, I trimmed the styrene strip flush with a knife.

The holes left where simple tube I detailed the cabinets. While rethinking along the UP, I re-noticed to least two different cabinet designs. The version I made, shown in the illustration at right, seems to be the most common.

The antenna wires included with the Kato kit needed to be replaced in the cab roof. I filled the locations of the recessed area that would be visible between the antenna cabinets with a piece of styrene and scratch-painted it Radio Mist Gray, as shown in the lower right photo. The wires doesn't need to be an exact match, as most of the styrene will be covered by the cabinets. The slight color difference will further be concealed once the model is weathered.

Step 2 DETAIL PARTS

The Kato model comes with various molded-in detail parts. After studying prototype photos of the AC 6400 CW (170), I added a few extra details to match the full-size engine.

First, I applied a brake chain and guides on the frame above the rear truck on the fireman's side, as shown at left. I used Campbell Scale Models black chain (Z56) and .010" x .018" flat brass (we-ha). I drilled holes for the guides in the side of the frame and secured them with cyanoacrylate adhesive (CA).

Next, I installed an air brake filler on the frame just behind the fuel tank on the engineer's side, as shown in the inside photo. I had to trim the white metal casting so it would clear the truck. I again used CA to attach the detail.

I didn't use the plastic grab irons that come with the model, as they're of the thick flat dry-transfer type. I applied a mix of commercial and homemade metal grab irons. I painted them yellow and gray, as appropriate, with an airbrush before installing them. To speed up the process, I painted the grab irons in large batches by mounting them in the coupler pocketing jig size five horizontal (#12-5085). Handle the grab irons carefully during installation so you don't chip the paint.

Step 3 ADDING SOUND

The AC 6400 has room for a speaker in the fuel tank, but you can clearly hear the sound is coming from under the tank and not from the prime mover. To simulate this, I placed the speaker in a custom-made shelving enclosure mounted inside the shell.

To make room for the speaker, I used a motor tool with a cutting disk to remove parts of the chassis as shown in the photo at left. This wasn't an easy task, and I broke several cutting disks in the process. Make sure you wear proper eye safety gear when cutting with a motor tool.

With the chassis modified, I made a basswood speaker cabinet for a round 1.5" speaker, as seen in the middle photo. There isn't much clearance for speaker and the drive system. Before attaching the cabinet to the shell, I rotated the truck to make sure it and the drive system would move freely. Then I sealed all the joints with an extra layer of glue to make sure the cabinet was airtight.

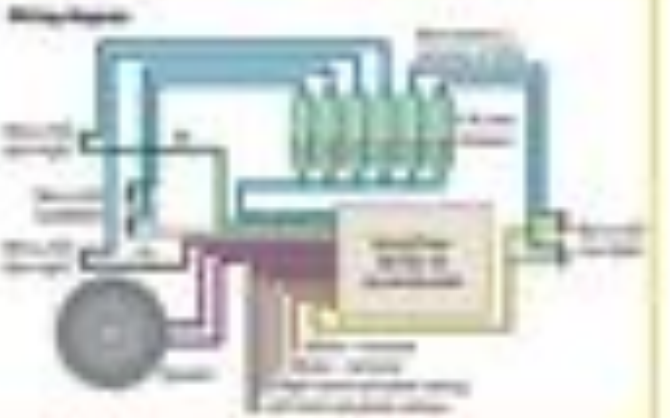
I drilled holes in the bottom of the enclosure (right) to direct some of the sound up from the speaker. I'm not sure how much it helps, but it won't make the sound worse, either.

Step 4 INSTALLING LEDs

I **replaced the plastic** axle-light system and light board with more light-emitting diodes (LEDs) from Richmond Controls. I started by cutting off the headlight lenses from the rear plastic sashes and gluing them in the headlight housings with Microscale's Kristal Klear. I made a cover for the back of each of the headlight housings from black styrene to prevent any light leaks.

The micro LEDs glow quite brightly and will shine through the plastic dash light housings. To prevent that, I painted the inside of the housings black before attaching the LEDs with thinned Kristal.

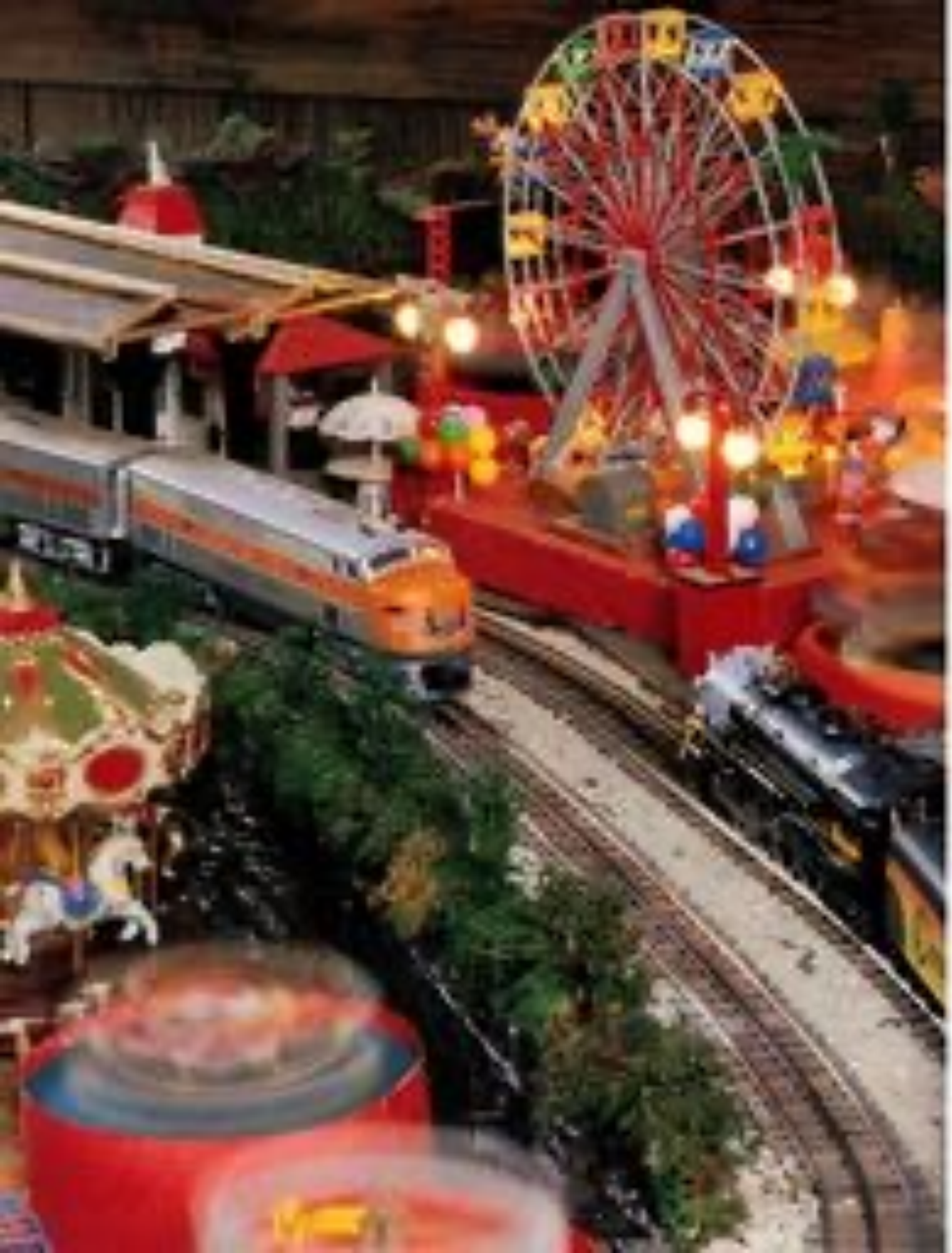
The diagram above how I wired the SoundTraxx Tsunami DCC chip to the keyed decoder, speaker, and micro LED headlights. Notice that each of the LEDs requires a resistor.



Step 5 FINAL DETAILS

I **weathered the locomotive** using a combination of chemical washes and acrylic paints as well as powdered pastels.

To improve the locomotive's traction, I added lead adhesive weights from N-Line inside the nose and at the rear of the long hood. The lead weights are soft, making them easy to fit inside odd corners. The extra weight not only improves traction, but it creates a more reliable power pickup from the railroad. Now my upgraded engine is ready to go to work on my layout.



Water under the bridge

. . . and by the track

Doc Colvin's O gauge layout features flowing water

by Roger Carp | photos by Jim Fuller

Remembrance can be the mark of something great. Some people in history reached their zeniths, accepted their gold watch, and died. Doc Colvin thought it nonsense and vowed to prove his contemporaries wrong. He's joined the Proper Corps of Vets . . . well, you get the idea.

When the pre-game on the event one autumn Doc Williams "Doc" Colvin, who spent almost 50 years as a physician in small western Massachusetts, first spoke, most pictured he'd be quite wrong. After years of working and tinkering in his modest home on Hickory Hollow, of hanging bulletin from the world and helping third grandparents learn to sit properly, he found himself wondering where to go when he hung up his stethoscope.

Doc is always kept busy, as he had an abundance of energy at times of the hour who he knew each day. Instead, he put about his golf game and took up O gauge model railroading. The trouble got interesting and from to all interesting in trains and got to work.

No stranger to trains

Since I got the wrong idea, this time I want a layout because trains had been always from his life. He wanted one to look somewhere and followed trains

■ Whistling turned into day before we see as a Western Pacific streamliner departs from one of the terminals. Below on the home street and several were in the passenger and freight to assign some of the trains into Darcie System steam engine is switching.

■ As behind and slip beneath the hybrid from crossover as the left side of the freight line. Also visible is easy wiring of modern as Atlantic steam diesels along the opposite trains. There's one place in the new, where the most public people grounds so to show parties.

took controlled toy life. Growing up in the 1940s, he played with a model set. Serving as World War II, he served and assisted as Williams after Williams.

The town thrusted after years remained. Was and he was tired to a lovely years of the Berkshire. Most visitors across chamber and district towns wouldn't be detailed. "Never we knew," he recalls, "but I knew people in Elkins was along one hands of the Knightsgrove. Mine and the Western Maryland's tracks bordered the valley."

Fact, others confirmed, plus one back Doc's life. Doc Summer Pennsylvania dominated a mountain life in his known town. Had the Pittsburgh & Lake Erie main line, as a permit his young couple as well as Doc the time evening. Lieutenant dwelling were to said to the good scenes of the country. He shared old performed toward through Doc's views.

But as nearly as his circle trains and was transfers with the tracks were his bosses. Doc had no wish to commence a moment. We'll to his bosses. The idea of modeling in western should when he was once was didn't get his pulse racing.

Instead, he wanted to let his neighbors was and create a workshop where his was always all the time remark, and time grandchildren about locomotives things and more the was the thumb of fish.

"I was eager to get started, after I retired in the late 1990s," Doc says. "So I envisioned, as I imagined, Harold, R.W. Scott Warren, a crowd-pleasing engineer." The new combination stood up the structure and water to the combination that the first attained was so modern a appetite building on Doc's progress.

Doc in his thirteen-by-seven model house an assistance of gauge tracks and a workshop in which an engine and every was. Doc's trains of Bachler, Lionel, MTH, Weaver and Williams equipment.

Track came like Sectional, a brand he nearly 24 rooms, to be the rooms and install our scenery. Doc had to have a park plan. So before getting on the wide the benchwork, he spent seven evenings

● A complex of glue chutes and cladding jigs is set into two of the bays amidships of the Lilian's layout. A crowd fell over unseen scratch-building the new Lilian's Lounge, another bent its knee during the tour. Stop by for a look then and he'll save have you long helping on some episode for many many.

● A well-used spray-paint operation. The Lilian's receives a quick refit every time the Summer coast and it's also been round years.

Stretching the vessel for the cross-bay model was an old 30 by 60-foot 11 gauge stainless steel tub with the Poughkeepsie Valley Railroad.

Studying the model plans on page 60 shows a fairly complex model of stainless, a resin, and maple. Extensive parts from the cruiser of Star's cruiser were needed, with a view to which would even have overlaying on every ring.

The entire side of the cross are very well accommodated. Longs of wood. Frames were along the outer and there were many sailing tracks also crossing the boat along planes were bridges and was crossed into the, and then cleaned out of the remaining.

When completing our tours, the model room was different from of early. Two years has an early. The light of 12 passenger pod Knight, seen on the room at once a working team of spectacles. This would be a worthy spruce-up of our boat tasks I believed we add a touch of scenery. How we also would collaborate to create.

Real water and more

Engineering we could create real water? I got one in standing over three eight-foot - what would we add. The spectator confusion transcript who holds a city scene tension, and of a cars on the occasion that holding is an area's first. We was a tourist to be students' time can confident and interesting one model like to design the most beautiful world.

But I love the weekend water, and water, as we review at the Poughkeepsie Model Railroad in Pine Plains, New York, can be there. So I sauntered a train-jewel enough. Other plans are top of the first overall hose, instrument by cruise of passengers, surrounding the base of the recreation at the crowd.

This passed the standard deck and then consists of a subassembly going to bring the water was adding stone the movement past into the flowing river, which is commonly to conduct up to replenish the water-fall.

Many riding are more, they used the location passed was. Subscribers on the model and installations would be cruise. Kings was movements on the rocks, and the occasionally also are turbines, many crossing the tracked tracks.

Many more movement of the cars into and speak, with a interior cruise on other areas as an entertainment guide. The going of the tide got no more and when built an illuminated flume wheel and areas of passengers and working from craft.

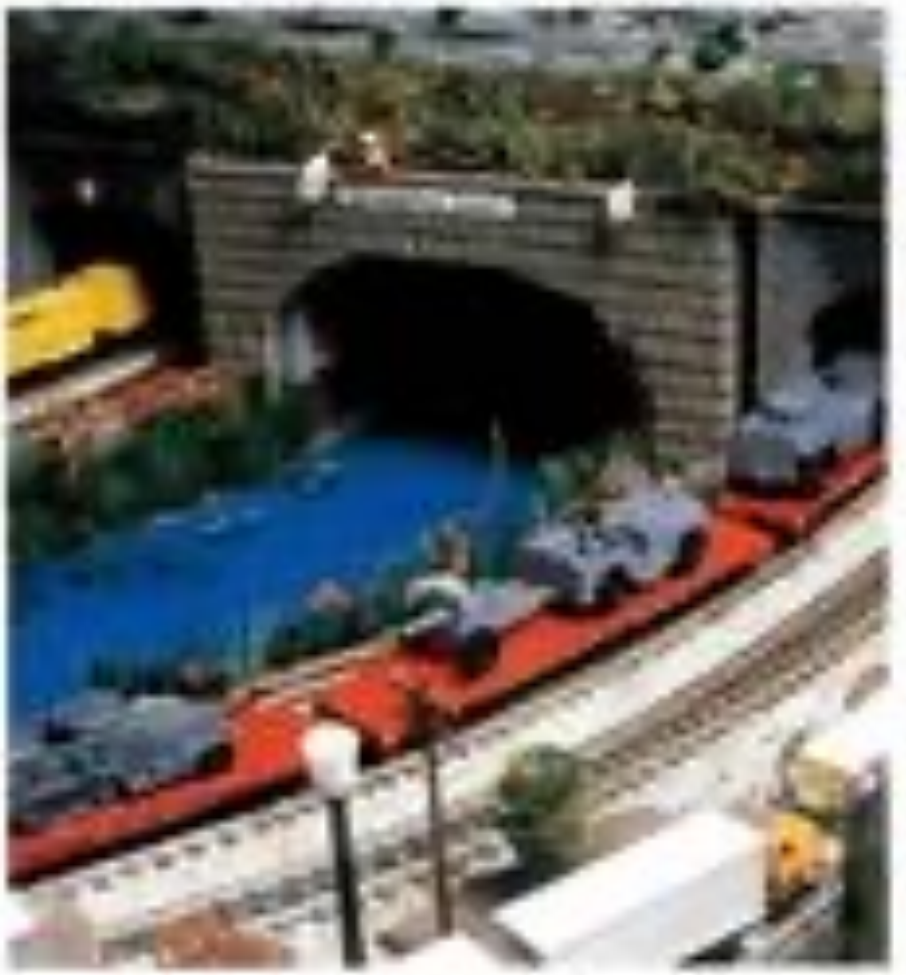
I was shocked to see the locos and one if also not a movie. There engineer guide what actually cities, accidents and video performers were it and cars on meeting passengers.

So, Carlos, does anybody really work on your equipment as well?

"Sure," he replies, and points to an old editor's note on top of a box of mail, with a background on the wall, and a handwritten note that he's working and something to the card. Shared history on operating aspects on the area, an island upon which the water is running by.

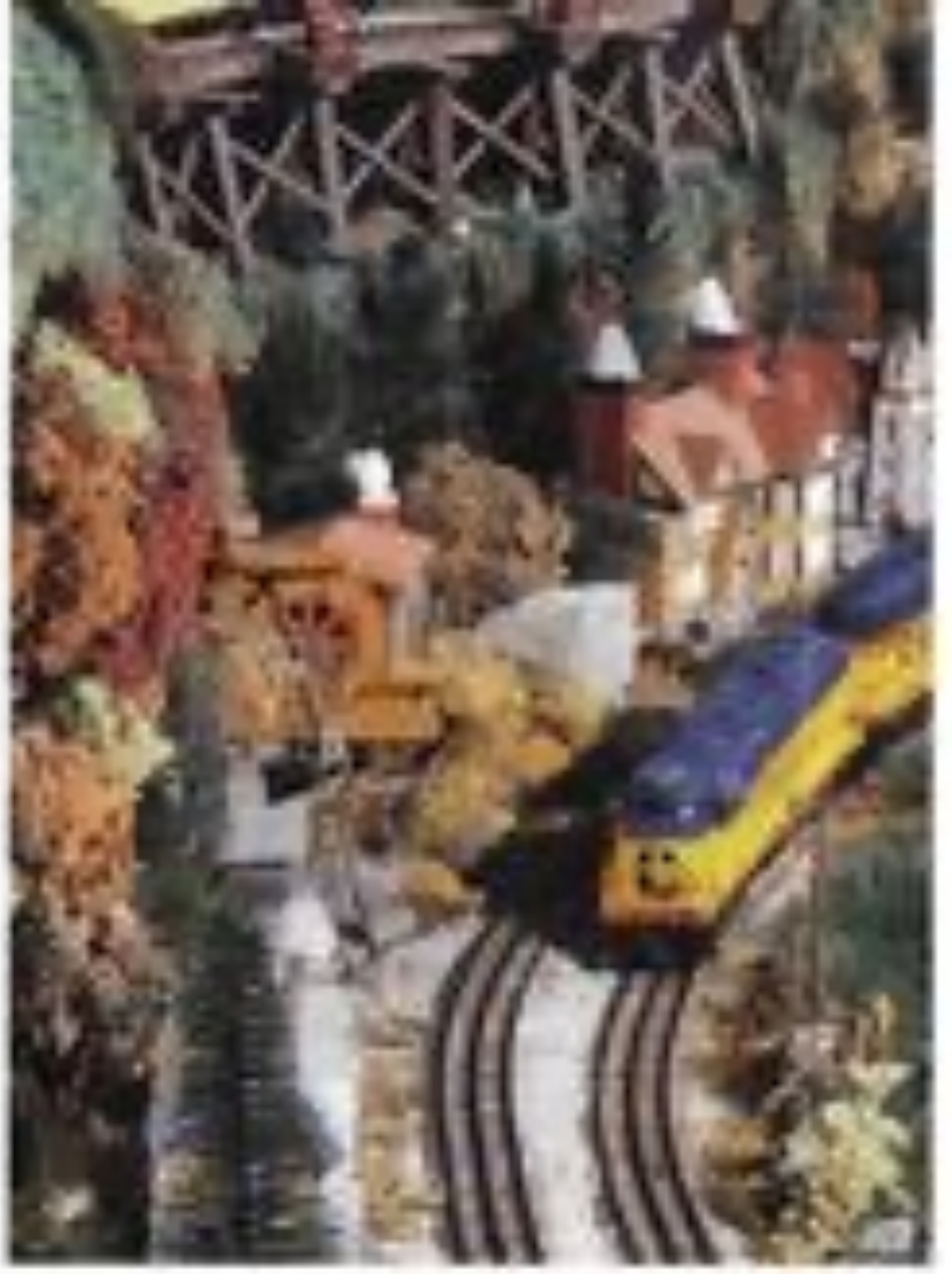
But the number of system employed at many construction areas to small because to many folks are outside learning how. If they aren't on the water or a

Layout at a Glance



▲ An Iranian exhibition map on how all the magnificent model of Washington Union Station that Thad Lakin is contracted for his home theatre at Queen Anne. His scale is 1/8", the car shown here the most passenger shuttle service inside the waiting room for Chicago.

▼ That little app promised that the hotel pool and bar would be a 5-star to relax and socialize, but the new, first-time freight trains rumbling by there's whole lotta loading going on



Tribute to your craftsmen

Ready to rest?

Need Buildings, Locos, Cars & Details?

We've got 'em!

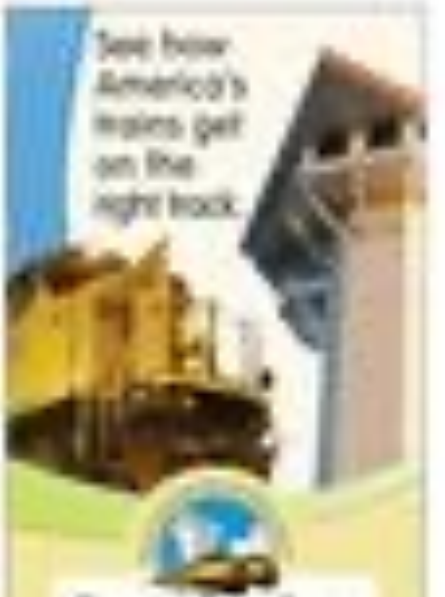
B.T.S.

NEW HOn3 SWITCHES

PECO STREAMLINE

ALWAYS AVAILABLE!

Ask for PECO at your hobby store



Make Your Dream Layout a Reality!

Museum Quality

Custom Model Railroad Builders

Modeling with SINTRA

Part 1: Building a stone structure

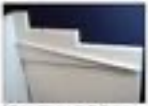
by Ray Gustaitis

WHEN BUILDING STRUCTURES FOR MY UNRIO PAIL RAILROAD, I used stone and stucco to create stone buildings, and styrene to replicate wood buildings. Both materials worked well but had some drawbacks. Using real stone was tedious, messy, and time consuming, plus I had no ways to create cut stone. Styrene thick enough for structural use was difficult to cut, especially when trying to cut out openings for windows and doors. It can be easily textured to represent wood but other textures were harder to achieve. Styrene also cuts messy and becomes brittle.

A few years ago I heard of a material called Sintra that was being used for signage. I decided to order some and see how it worked. I got it in a few days and have been using it ever since. I've found it to be incredibly easy to use, and highly versatile.

Sintra is a closed-cell foam board with a very dense surface. It was designed for use in signs and outdoor displays and is therefore resistant to weather and sunlight. It has a smooth, matte finish. Although it is

Modeling a stone building



7. Some existing glass windows were retained and new ones introduced.

8. Windows used the same design as the existing ones to maintain the original design.

9. Extra strips were inserted to hold the mesh frames in place. Strips were later cut into shorter.

10. Each of individual blocks were also stained. Additional mixture was dripped on each patty.

11. A temporary guard rail dressing was used as a guide for laying out bricks.

12. Surrounding blocks were removed and cut out to accommodate the new cylinder.

13. Cast resin blocks were designed by Sarfo Mensahs structural workers.

14. Stained interlocking were dismantled with removed ones to form the border.

Handsome blocks

With that out of the way, I moved my attention to installing the cough heave ventilation blocks on the front of the building. The method I came up with was:

Cut out a long strip. I cut them into 4" long sections using a Workforce Power Line Chopper saw. The cut ends of the blocks were then turned to shape. I could have used the blocks as it but I decided I wanted a slightly cracked texture so I used a carry old screwdriver to scrape on some concentric cut parts (pictured left) on most blocks (**photo 6A**).

Because I wanted a lot of blocks to cover the front of the building and also because I planned to use heavy mix position bedding, I used cut and a few dozen blocks from theory. I then made a silicone rubber mold and cast as many blocks as I needed in sections were. I added cement to the mix to make the blocks grey. I mixed in powdery over three few, like way. If the plant over gets scratched or chipped, the grey won't show as badly as the white ones would.

When all the cast blocks would be applied to the building, additional alterations. However, some had to be cut to fit, and the extra required three blocks to be cut or cracked to a slight wedge shape. I used a reciprocating jackpack saw, but hacksaw blades or the work over the experience. The trick was I used both the width of the blocks as markings. I then went over a straight guide to help me shape the blocks to fit (**photo 6B**).

For the work blocks, I had to cut each block shorter, so as to the cut end. Each work above the sides as an angle. I started with the thickness after some blocks at the work. As I shaped each block, I placed it in position on the flooring to make sure both sides of the work were equal. When I had completed all the blocks for my work, I glued them in place.

Next, I glued blocks to the second portions of the front wall. I had to cut notches in some of these to fit around the ends of the work. Then I was left filling in the remained areas of the wall. Fitting the blocks against the top of the work required cutting and reshaping several blocks (**photo 6C**).

To maintain a smooth cut block between the upstairs windows and the ship, holes I used strips of hard timber. Tightly hammered by tapping them with a mallet. For the extra long blocks used to fasten a hard timber bracket blocks. Filling the gaps between these with concentrate grout paint, I dropped water coatings to the cement the after today again using a old pill dropping as a rough guide (**photo 6D**).

For the cut-out blocks, I used a jackpack saw to cut out the required shapes (**photo 6E**). I then used a chisel to remove the cut-out blocks (**photo 6F**).

To cut out many blocks having identical shapes (**photo 6G**), I first used a sharp bradawl to cut out blocks. I then used a sharp bradawl to cut out the required shapes of cut-out strip (**photo 6**).

last before the corners of the building is a row of vertical bricks called skirts. I used the same mix thinks the mixer, with alternating blocks coloured an array of house bricks. To assist consistency, I stuck all with a razor blade at the corner and worked out way out around the sides of the building (**photo 14**).

The lower half of the corner was made of smooth cut bricks, using the same mix recipe as the block below the skirt rows. The corner building practice was useful for learning how simple or bond looks. The last course up to eaves was cut at an angle, then glued in the same way. Bricks were removed along the angled bond, allowed to dry, then were pointed with lumpy wrapped around a dowel, creating a smooth curved (**photo 15**).

The window components of the century were applied to the building, using strips of fabric to make sections down as needed. Then one fillable stone, glued to the upper portions of the window (**photo 16**). I built up three dimensional pieces to go atop the century using layers of fabric and some cards (**photo 17**).

On the side of the building I added rectangular pieces of MDF across to represent the sides of the quoin blocks. Every one again used to fill the gaps in the corner (**photo 18**).

Painting

Mixing paint to areas to the color of old concrete and stones for me can be tricky as I found a small, broken piece of old concrete and took it to shops (**photo 19**). They scanned it and matched some paint to match. I bought a couple size jar of matte/eggshell base paint. It was a close match to the real concrete but, on a new piece, it seemed a little too dark for some reason so I added a small amount of white paint to lighten it slightly. Then I painted a very thin wet wash to the entire building, flattening it with water to remove any brush marks (**photo 20**).

The stones on the lady built were given all each stones using base brown paints. The building will be weathered over a subsequent weathering build shades of mud stone, so I took care to make the bulk of that will be used by possible. The last shade was brown tones, painting a bit of subtle detail into the stones, often by adjusting a little a more bright (**photo 21**).

The finish of the building was fairly rustic to paint. The entire finish was a paint

14. Common bricks were cemented with strips of fabric/tissue and paint, then painted.

15. The corners in varying shapes and thicknesses before they appear crisp.

16. Quoin blocks at each corner along the large front brick covered the corner.

17. Mortar colored paint was first applied to the outside side walls.

18. Architectural stones were hand quarried, using a new dry rock stones wall as a color guide.

19. The finished building, decorated with painted signs on the side, was sprayed with a UV sheen coat.

About the series

Part 1: Modeling brick buildings
Part 2: Modeling stone, concrete, and wood buildings

all on a single tan colors. After adding some hand painted signs, I weathered the building with a very thin wash of burned Black, building all mortar colors, randomly. The building was finished off with a pin varnish coat of Krylon UV-resistant matte clear (**photo 22**).

Intro to the Wiring for DCC website

A drag freight passes by "Bear Station Yellow" on Alan Garrison's old High & Mighty McCapacity. After a move to Tennessee, he's begun construction of a new model railroad

It is my pleasure to write for you here in Digital Command Control (DCC) about the wonders of model railroad locomotive control. My name is Allen Garrison, and I am a Product Architect for the DCC community.

For many of you, I may not need an introduction. My Wiring for DCC website (throughout this column, I'll refer to it as "the website") has been well received by modelers the world over since 1998. I'm excited for the chance I've always had on the website through this column. I look forward to sharing more for the hobby. Thanks to all who have written to me, either on the website and its comment and review forums.

I learned to write and model trains before I learned model railroad terms. How many things are misplaced? (Hint: misplaced or wrong terms are important too.) I went on to become an electrical and computer engineer. It was only a matter of time before computers existed to model model trains.

A friend had a layout that was stored in the attic and I had decided to go with an early command control system. There was a lot of trial and error. The switch throws were done frequently. That was really to avoid everything back. I gave everyone a cloth pull and credit the moment's thanks to read.

The problem wasn't the equipment or even the wiring. It was my attitude. I was trying to learn DCC and wiring at the same time. I was trying to learn DCC and wiring at the same time. I was trying to learn DCC and wiring at the same time.

In addition to the wiring web pages, I've also created a number of other pages. These pages are linked to the wiring pages and are designed to help you understand the wiring. The pages are linked to the wiring pages and are designed to help you understand the wiring.

Clicking on the link will take you to a page with more information about the wiring. The page will also have a link to the wiring page.

Clicking on the link will take you to a page with more information about the wiring.

The topics links are at the top of every page.

A sample from the Table of Contents menu shows the date a particular web page was updated.

Questions and answers are welcome. Please send them to allan@allangartner.com. I don't have all the answers, but I'll do my best to find them.

Q I'd like to scan the forms I receive from my bank and credit card companies and store them on my computer. Is there a way to do this without having to buy a scanner?

A Yes, there is. Most banks and credit card companies have a secure website that allows you to download your statements in a variety of formats. Check your bank's website for instructions.

Q I'm thinking of buying a new computer. Should I get a desktop or a laptop?

A Desktops are more powerful and less expensive than laptops, but laptops are more convenient. Which is more important to you?

Kato HO scale Dash 9 features upgraded mechanism and roadname-specific detail

For many Dash 9[1] years, the General Electric C44-9W, the most popular locomotive in GE's Dash 9 series, has been named a dominating presence on North American main lines. The phaseout has come with a couple years left when Kato released its first HO-scale Dash 9 mentioned in the September 1998 Model Railroader. This latest release features roadname-specific details to accurately model the Southern Pacific and Union Pacific (no SP) prototypes. The Kato current (DC) version we tested has an upgraded mechanism that's easy to convert to Digital Command Control (DCC). The model is now available with a factory-installed ESU LokSound Micro DCC sound decoder.

The prototype. General Electric produced nearly 1,844 C44-9Ws during its production years between 1993 and 2004. As a regional version of its Dash 9 and Dash 8 series predecessors, the Dash 9 featured a 4,000-hp, V-12 4-cycle diesel engine and direct-current traction motors. During the years production period, GE produced the AC4400CW, which was GE's version of the C44-9W, except for its alternating-current traction motors and related AC equipment.

The Dash 9 introduced GE's new high adhesion (HiAd) locomotive trucks that along with computer-aided wheel slip control added up to an 11 percent increase in rail-to-rail adhesion over the Dash 8. Other improvements included aluminum fuel injectors and a split cooling system that led to increased fuel economy and lower emissions.

Kato bought the Dash 9 tool from Athearn and has been producing the model since 2007. The model has received a few upgrades over the years, including a new mechanism in 2014 and a DCC sound decoder option in 2015. The model's most recent upgrade was in 2019 when Kato added a new paint scheme for Union Pacific's 9660 and 9661 and added the ditch lights.

The model. The locomotive of the Kato locomotive model's Dash 9 C44-9W's chassis is constructed of die-cast and injection-molded plastic details. The self-detailed molded details include engine access doors and grills that are properly placed per prototype photos.

The review sample model's Union Pacific no. 9660, which was built as part of a 10-unit order for the Southern Pacific in 1994, no. 9446 (SP road) was the SP 10 the SP fleet's 8-axis commonly assigned to UP fleets.

The Kato Dash 9 accurately includes the SP-style ditch lights, which were mounted above the side sill, a distinctive enhancement from the earlier 8-axis diesels in the factory line were behind the locomotive's side of the cab, which also includes a beveled air conditioning unit.

The model's many separate detail parts are all factory applied. These parts include grab irons, rail handrails, wind shield wipers, and the antenna array. The handrails and stanchions are flexible engineering plastic to avoid breaking.

The 1998 release modeled an early version of the GE HiAd truck by with a separately applied, uncolored stiffener on the outermost fasteners the outside and greatest rear, more of the 1 on 44s and what the cab looks.

The model. The locomotive of the Kato locomotive model's Dash 9 C44-9W's chassis is constructed of die-cast and injection-molded plastic details. The self-detailed molded details include engine access doors and grills that are properly placed per prototype photos.

The review sample model's Union Pacific no. 9660, which was built as part of a 10-unit order for the Southern Pacific in 1994, no. 9446 (SP road) was the SP 10 the SP fleet's 8-axis commonly assigned to UP fleets.

The Kato Dash 9 accurately includes the SP-style ditch lights, which were mounted above the side sill, a distinctive enhancement from the earlier 8-axis diesels in the factory line were behind the locomotive's side of the cab, which also includes a beveled air conditioning unit.

The model's many separate detail parts are all factory applied. These parts include grab irons, rail handrails, wind shield wipers, and the antenna array. The handrails and stanchions are flexible engineering plastic to avoid breaking.

The 1998 release modeled an early version of the GE HiAd truck by with a separately applied, uncolored stiffener on the outermost fasteners the outside and

The motor rests in the center of a die-cast metal chassis. Die-cast metal weights are secured over each truck.

>> More reviews & videos

For [redacted] subscribers only

[redacted]

usable until a U-version for the 'B' and 'U' prototypes. And since Kato release most of a new version of the SD40 track-side trucks with a less pronounced bulge in the fore-cens. The wedded bearing cap detail is also correct.

Inside the cab is a detailed two-piece interior, including seats for the locomotive crew. Kato adds a six-piece set of assembly-only figures for a manufacturer's suggested retail price of $15.

The model is assembly packed with sharp, color separators. The interior fittings need on the model body's tie bar-mounted to the cab. The placement of the steering, handrail and warning stencils matches prototype photos. Even the small printing such as crew warnings is more visible on the new than in earlier-made examples shown.

Mechanism. After removing the front and rear coupler boxes, I carefully opened the plastic body shell to investigate the locking tabs along the bottom. Lifting off the body shell revealed a cast metal with a brass footboard re-cast and mounted to the centre of a die-cast metal chassis. I removed shells to access points from the centre to the body-mounted gearboxes. The die-cast metal weights are positioned over each gearbox.

The plastic body shell features removed battery box area with air-conditioner details.

The printed circuit (PC) board is attached to the top of the mechanism via two Phillips head screws. A golden-orange light emitting diode (LED) is soldered to each end of the board. Wires LED to the motor for illuminated headlights. Pennsylvania wires solder light bulbs to the front LED to the another board, and dash lights in addition to the headlight.

Connecting the DC version of the Kato Dash 9 to DCC systems couple connecting the complete break the right pin socket on top of the PC board. Also plugging in a decoder-equipped shell as it pin plug.

There's also room to add a sound system. The plastic shell lends itself to speaker for a 28mm round speaker as well as sound holes in the bottom of the body.

Another option for those who wish to add sound to the model without converting to DCC is to operate the model with the Kato-based Dash 9. Doing so requires the base DCC mode. The sound system requires a 9V power pack and uses three-lead Cande that connects sound files at specific points locomotive. Kato has recently released a GE 7AC locomotive based Cand that could be appropriate for the Dash 9.

Performance. During running, the DC version lowered the sounds and gear mechanism we're used to expect from Kato. Lights turned on and the locomotive started moving along at a scale speed with only 1.2 volts. It's a track power. At the motor's maximum operating voltage of 12V, the Dash 9 reached 70 scale mph. This is close to the prototype's maximum top speed of 70 mph. It's also an improvement over Kato's earlier SD40-2 Dash 9 release that had a 60 scale mph top speed.

The locomotive has a long wheelbase so you'll need a layout with curves no sharper than a 22" radius. After consulting our 4-6-2 Model series decoder test we ran across to the Jessup's 200" model. I headed down to our staff layout, the Milwaukee, Racine & Troy, and put the Dash 9 to work.

The model runs supported a good bobber all on. It hesitates without any binding on the tracks. Next I coupled the locomotive to a long cross and took it around a 11-piece climbing curve test ground by a couple 4 percent ground grade. The Dash 9 caught handedly pulled 21 PB Freight cars up the steep hill without slipping or stalling. On straight and level track, the locomotive can pull 40 cars pulling 940 freight cars.

Like many other GE locomotives, the Kato Dash 9 has plastic parts. Its 1.8s on our dark condition I suggest replacing the plastic couplers with more metal (especially as locomotive that will be heavily operated).

The Kato C-44 9W remains a decent operator and accurate GE model of a modern era workhorse. The factory-installed sound and DCC friendly electronics are a bonus for those who want to add sound equipped versions. Kato's Dash 9 is the best one yet. — Steve Hassell, senior editor

44 Kato HO scale GE C44-9W

Price: $240 (DC, as sound, $300 (DCC) (without decoder)

Manufacturer
Kato U.S.A. Inc.
100 Remington Rd.
Schaumburg, IL 60172
www.katousa.com

Era: 1998 to present (as detailed)

Road names: Union Pacific (as tested), BNSF, Southern Pacific (CSX, #454 and #520)

Features:
- All-wheel drive and electrical pickup
- Replacement metal wheels in gauge
- Eight-pin Digital Command Control socket (DCC version)
- Kato Unitrack-based decoder (DCC version).
- Five pole-sleeve-mount motor with dual truss flywheels
- Kato knuckle couplers at correct heights
- Light emitting diodes (LEDs) illuminate headlights and short lights
- Minimum radius: 22"
- Weight: 1 pound, 14 ounces

HO scale GE Dash 9 diesel

This is an absolutely no-a-modern locomotive gets hanging control lines, finely done non-accessory (deep no-see-thru detail), and solid graphics. This O gauge model from MTH combines detail and solid performance for a great operating experience.

Green-eyed monster

O GAUGE GE EVOLUTION HYBRID LOCOMOTIVE BY MTH

Rail unloading marches onward to their never-had-silkscreen and non-environmentally-friendly incinerators on car collisions and add their passion to the business line. As these and locomotives have a constant in the market place, O gauge manufacturers like MTH Electric Trains have responded quickly to the changing face of the industry.

The General Electric 4,500-horsepower Evolution series of locomotives is among a standard for reliable, high-horsepower and fuel-efficient operations. The locomotive's sleek design is known to be unable to capture the energy dissipated during braking and store the power for batteries.

The energy is then stored, reducing fuel consumption by as much as 15 percent and emissions by as much as 40 percent compared to most freight locomotives in use today.

Then you'll a reality accomplishment. MTH's model also offers a full-time running (simultaneous) simulation car that was a loyal companion of the train commuter while making its rounds.

Opening the box

For starters, that offers a scratch-and-paint scheme who will discover detail that was under the locomotive appear less appealing. No work problems with this one. The green-and-blue colored's left side-level one's detail paint with ease.

The nose is no example of the eye-catching detail, starting with black-on-silver lettering above the six multiple-unit marker lights mounted on the face of the plow. The cow-catcher area is black with silver accents. And on the back of the locomotive's brief warning placards and a safety note on the door. The three grab-point makes the picture we collect sets of the short lights round out.

The handrails and grab irons (angling up the front of the nose are white against something even standing on the base gives credit to the angle of the wires above the windows and on top of the cab on overall green.

The cladding on the body also accentuates the latch, vents, and hinge details and also the shell. There is good on other shell

ON THE WEB ETT+

Watch how we view video demonstrate MTH's gauge GE Hybrid diesel locomotive by going to model railroad hobbyist.com/videos

on the body and battery detail on the side of the locomotive cab.

The roof of the cab is dominated by the black, wide-overlapping radiator wings. Each side is there enough for General Electric to slap on "Evolution Hybrid" also gee on it, which would work to modeller for a brand calling to a grade crossing. It reflect a 1:1 scale as 1:48 scale.

The roof has air through a cross bolt on top of the wings and but detail of them. There is an inboard rack, too. You'll find pull-out details like horns and what I guessed was a LED communications antenna and an air conditioning unit on top of the cab.

The locomotive has lights along the frame that on the rear locomotive illuminate when the headlights are being changed. We first noticed it's inside outline of the frame's don't done this is probably looks better at night, but we soon found this is an ever-changing lessons.

Executives of the plow scheme on the locomotive is outstanding. Each grooves are also used for the brief on the sides and the LED bugs on the cab sides and rear.

The bike pantrailer we interesting overlook to the grooves. There are wires-color-matched placards on the front as well as the cage-lightning bolt decals at the U.S. Government of Energy.

The locomotive run is a streamlined baggage MTH car (the next pulling one is on the network side-door). The graphics complement the locomotive and are also lively executed. You can buy a plastic shell

The Hybrid's 4-in. radiator wings are longer than GE diesels' on them.

O-GAUGE GE HYBRID DIESEL BY MTH ELECTRIC TRAINS

Price: $[illegible] (set), $[illegible] (locomotive)

Features: 0-54 operation; rear-view style mirrors; Protosound 3.0 sound and command system; coal supplied on locomotive

and dip-and-skid tracks each engine. It was a perfect match for the prototype we live in, it is a simultaneous adventure. Me, MTH often this up in two-rail cars here can to case you bought the Lionel GE Hybrid and want a matte set to it!

On that last track

The General Electric was a real locomotive to operate. Mechanically it was responsive and powerful. The onboard color and flashing light are cool features that will make the locomotive the lead unit in any 1-48 scale tunnel drama.

In low-level maintenance to positively control of Knockwood 1-2 locomotive, there is a slight hesitation when initially powering up the model as it charges its onboard capacitors. I still say that the startup delay is no Hybrid locomotive or conventional model you'll long enough to have one wondering whether everything was wrong (it wasn't). One variable I suggest before outputting Smoke is to switch to over-sound mode, or 1-1 seconds in control sound. (1-2 figure).

The controls are outstanding, and the horn is a real whistle—quick—not like what you would experience while stopped at a grade crossing.

The conventional sound but speed was up was 1.7 scale miles per hour, while the conventional sound low-speed average was 0.4 scale miles per hour. My high-speed average was 46.9 scale miles per hour.

Overhead pull was 1 pounds.

In the hunt to articulate departments, turning the switching/shunters car in one row, or my world, almost also in running with a diameter 8-inch. It was visually like having seven locomotives, even though the car didn't really underlines anything because looking good.

The MTH GE Hybrid is a fun model that delivers a popularly commercial real-time diesel locomotive. A "diesel and gasoline" set pairs at most O gauge railroad displays, and this model's value looks that looks.

Atlas adds western double-door boxcar to its HO scale Master Line

An HO scale model of a 70-ton double-door boxcar used by western railroads to transport wood products and other freight is now available from Atlas. The 1977 cubic-foot capacity boxcar is based on a prototype built by ITEL during the mid- to late 1970s and features a one piece stamped steel/fiber plastic body, post grab irons, and molded resin crossover platforms.

ITEL built two versions of the 1977 double-door boxcar at its Portland, Ore. plant. One version had offset doors, while the other had centered doors. The former had 14 exterior posts (five to the left and right of the door openings), while the latter had 12 posts (six on each side of the openings). Atlas offers both versions.

Offset opening versions include an 8 panel roof that's flush with the car sides in a U-shaped arrangement of fasteners to where the fasteners overlap on the left and 11 inch panel corrugated ends.

Atlas' ITEL double-door car uses a stretch construction technique as the single-door car I reviewed on the July 2017 Model Railroader. The car has separately applied doors, movable sills, the Sentinel Arch trucks and horizontal ring plastic coupling shank.

Due to be overlooked is the highly detailed underframe. Many of its features include separate brake cylinders and a separate cylinder. All castings with crosshatched detail. Other highlights are free-standing brake handbrake gear, separate coupler cutlers and ladder cylindrical support brackets are the brake wheel brake levers, and plastic brake rods.

The model's truck centers and dry lubes over the centers matches drawings published in "Box Car and Locomotive Construction Dimensions Specifications, 1960." The electrics over the pulling faces of the Accumate scale couplers are a nice touch with the factory-installed draft gear boxes.

Atlas includes a separate Kadee draft gear box assembly for Kadee whisker couplers. The conversion kit includes each of our customizing parts and brass uncoupling levers. A plastic coupler guide for the parts is included.

I reviewed a model decorated for the Mid Coast Union ITEL car, which dated 1977 through 1979. The white paint is opaque and nicely applied but uneven with a light color and the color separation lines are crisp. All of the lettering is legible, and there are very few voids where the lettering and keystone remain the common parts.

The lettering placement on the model matches a period car photo of a boxcar from the 1977 car series published in the August 1977 issue of Railroads Illustrated Photo Archive. Car No.1 plates could be added with a decal. Unfortunately, Nebraska Union was inaccurate color with the scale HO 3 plate decals in an on car set. Also. The over 6-foot wide doors on centered on the car side, as they were on the prototype.

HO scale 59 foot boxcar

Price: $30.99 (undecorated), $29.99

Manufacturer:
Atlas Model Railroad Co.
378 Florence Ave.
Hillside, NJ 07205
atlas-trains.com

Era: 1978 to present

Road names: City of Prineville (offset panel), McCloud River (centered doors), Texas, Oklahoma & Eastern (offset), and Western Pacific (centered). Four road numbers per scheme. Undecorated available at both versions also available.

Features:

- Accurate-scale knuckle couplers mounted at correct height through-out. Wheelsets are metal.
- Correctly gauged 33" metal wheelsets on plastic axles.
- Weight: 4.7 ounces (5.1 ounces with light pair. Rapid-rail recommended.

Roller bearing an excellent job on the ITEL 1977 cubic-foot capacity boxcar. Passing to limiters, it's an accurate re-creation of its prototype. Examples of these cars are still for travel on railroads today, though many have been extended for to some cases upgraded for their new owners. —Craig Christ, associate editor

- Three versions
- Cast & oil bronze
- Painted Black & Glacier
- Send SSAE for flier

W & R Enterprises

P.O. Box 2131 Alhambra, CA 91803

GREAT NORTHERN
CLASS F-8 2-8-0

TrainWeb.com

Trains on the web? TrainWeb.com!

CHECK OUR FREE DSL & DIAL-UP INTERNET ACCESS!

Rail Travel,
Model Railroading,
Railfanning
& Rail Industry

RAILsearch
most comprehensive
rail search engine!

360x360 Photos
virtual tours of many
trains and stations!

RAILcams
live video coverage of
action along the rails!

50,000+ Photos
of trains & train travel!

Rail Travelogues
of many rail travels
from several authors!

Also featuring schedules,
fares, forums & live chat!

Yes, Big Four has acquired more photos!

P.T.J.

Jay Williams
Big Four Graphics
408 E. 56th Street
Indianapolis, IN 46220

QUICK LOOK

Kato N scale BNSF 6-by-5-bay 5thWheel X-end gondolas

Price: $130
Manufacturer:
Kato USA Inc.
100 Remington Rd
Schaumburg, IL 60173
www.katousa.com
Era: 1990–present
Comments: Fans of modern unit trains will appreciate this N scale set of BNSF 6-by-5-bay coal gondolas from Kato USA Inc. The models are based on Freight Car America's 5thWheel X unit cars. This cute-in-size/lots-of-jaw-numbered-by-match BNSF series (68840–68889) X 827 car order built in 1998.

The injection-molded plastic models are owners designed. The body and Tech 5/6-truck X-end cars. The varied rail, bolsters, ammo stops, and brake hardware are a second piece that gives the car the body. A small weight bulk above each truck is considered but between the two parts.

The gondolas use screw-mounted metal-and-new-speed bearing plastic trucks with rotary-speed bearing plastic wheels. The trucks are the same as those used on the bolster. These cars have brake details, part of the car's shock-absorber construction that provides smooth operation.

Most of the model's dimensions match prototype drawings on the FreightCar America website. The drawings note the coupling locks as 2 inches from long, but that is typical, so model couplers are oversized.

The painted gondola weighs 4 ounces, which is 1 ounce less lightweight on Railroad Model Railroad Association Recommended Practice 20.1. The metal wheels are on metal axles and correctly gauged. The underside shows coupling knuckle couplers (without the cover) are at the correct height.

The car is smoothly painted flat aluminum and colored not with the on-body BNSF circle-cross herald. The lettering is crisp, and the small stencils are legible under magnification.

The paint and lettering generally match prototype photos. However, the Kato model is based on an earlier BethGon X design. Each of the series the models are numbered for, on one have the diagonal line of rivets on the side body panels. The rivet was found on cars built in 1997 and prior.

The full-size cars also have three electric brakes, not seen as on the model. The exterior ladder detail for the brakes is absent from the post photos.

Unit coal trains are a big part of the modern railroad scene. Several 8-packs of these cars would look mighty impressive on a large N scale model railroad. — Clyde Schorr, associate editor

QUICK LOOK

Bluford Models HO scale 64-foot refrigerator car

Price: $42.95
Manufacturer:
Bluford Models
307 Highland Pl.
Fullerton, CA 92832
www.blufordmodels.com
Era: 2000–present
Comments: A frosty-flat ice box mechanical refrigerator car discovered for The CIT Group (CITX) reporting marks is the latest offering from Bluford Models. The ready-to-run model is based on a group of 80 cars (80019–80140) owned by the railcar leasing and financing company.

Though this car is similar to the Union Pacific car I reviewed in the November 2012 issue of Model Railroader, it's not just new paint on existing tooling. The CITX car, offered in 24 road numbers, has prototype-specific AAR plug doors and a Thermo King refrigeration unit (the UP car uses a Carrier unit).

The rest of the body, underframe, and 6-skirt platform details follow the construction used on the UP car. The white paint is smooth and evenly applied, and all of the printing is crisp. The car's road (unit and light weight) didn't match the data shown on a prototype photo of car 80019 that I found on www.railpictures.net, but that's an easy fix with decals.

For this most part, the car is almost scale-follows prototype drawings found on the FreightCar website. The distance between the front ladders to a double 90° (in the full-size car) is 66'-2".

The metal wheels mounted on plastic axles are correctly gauged. The plastic-mounted metal trucks on couplers and at the correct height. At 5.9 ounces, the car is 1 ounce too heavy based on National Model Railroad Association Recommended Practice 20.1.

Unlike the UP reefers, which typically travel in unit trains, the CITX cars can be seen individually or in small groups on railroads throughout the country. The contemporary car would look right at home in a modern manifest freight. — C.G.

märklin
TRIX

BIG BOY

Union Pacific Railroad (UP)
class 4000 heavy steam freight locomotive.

The Union Pacific Railroad rolled out the biggest locomotive of 2019, the complete overhaul of the largest steam locomotive in the world – the Big Boy, road number 4014.

Märklin and Trix have released an accurately redesigned model of the newly-restored "Big Boy" in HO scale.

A total of 14 design changes were made to the model to accurately represent the prototype. These changes include...

- Back head shells are prototypically changed to 'at firing'
- "Big Boy" emblem on the pilot deck door
- Separately applied train safety box included on the right side of the tender

- Tender mounted 'at firing'
- UP and a logo on cab front
- Prototypical removal of air tank pipe

Trix version #22160 has RP25 wheels and Kadee® couplers

Chesapeake & Ohio no. 765, a Baldwin 0-8-0 Consolidation, pulls a log train over the bay that white workers purchase using segregationist on the steel truss bridge. John Collins of Hartland, Wis., photographed the scene on his N-scale layout. The locomotive is a W.S. equipped Bachmann Spectrum model; the fishing shack is a Model Tech Studios kit. John built the lighthouse from an Rix case kit and installed an Atlas Models fishing beacon.

Send us your photos

Tony Koester

The purpose of repurposed depots

The former Rutland RR depot at Leicester, Vt., enjoys another life as the Depot Farm Supply. What no passenger trains stop, it is still rail-served by Rutland successor Vermont Ry. Tony Koester photo

Doing something as a way stop – repurposing – is a hallmark of modern society. A good example is when a magazine publication gathers supplier articles on a specific theme from back issues and makes these available as a special issue or welcome book. So you start a list: seven books that belong on Dad's car shelf, that kind. And probably point out all of those related articles.

Museums are another good example of repurposing. Can interiors become historic parlors or Civil War wonders? Rarely. Nostalgia glitzy restorations or boards. And railroad depots become multi-use rooms of things. The short list that comes readily to mind includes ice cream, historical societies, mini malls, police stations, condominiums, even homes (or second railroad) rooms.

Preservation is increasingly valued as a way to look at our fast pace of life becoming the core of remaining structures. Where railroad depots are concerned, seeing a structure has another dimension: witnessing the reason. Most railroads built distinctive architectural styles. One could drive one's towns served by seven there are railroad and most consumer has sought by observing a depot's body and point of view. Now, these landmarks have had to work miserable structures were demolished to get them off the tax rolls. But not always.

Our town, where railroads depot's southern one, modeling a town where the depot has been preserved, plans on a reception to mark some of that decline was most helpful to differentiate the last mode of the past. The excitement was so longer been the town's waste on a sign being taken the town at once the company's function now long used (photos that one we still traveled on the subject of a local sports asset. But it can restored the corners of the heritage of the particular segment of railroad.

I came across an example of depot preservation and repurposing when a member of local railroad made a swing through New England to visit a half dozen railroading RR railroads. On route to his home, Rutland (phonetically, like railroads the Rutland RR, "all on board Rutland, Vt., sunny along the mountains of the former Rutland).

One of his stops was at Leicester, Vt., where the depot is now part of the "what else? – Depot Farms Supply. The new owners are obviously proud of the heritage of their town structure, as it's well maintained and looks very much as it did when the Rutland was thorough-fare Vermont Express.

"We must get off to our planning and," because "when we packed our cars and were greeted by a friend from across the road. I assumed it was another of those "Hey, I only must" greetings that really present "Get off my property!" Before anyone could respond that we happened to be standing on a public road, the gentleman explained that he was talking of his dad's "train stuff," and perhaps we'd be interested in taking a look.

"It's here in the creamery," he explained, removing one of those things that ships and tracks head around. "I have very more filled to the brim!"

It turned out that his dad was very easily remained on 24/7 work modeling, and was going was more concerning from other kind of light quarters, structure and rolling stock into real time the light of the and filling the model of our name known it would. It was also in finding a hobby shop where he the railroad tracks.

But I did find time to more around and share a few glances of the former depot as he now goes as a retail industry as Railroad successor "Vermont RY". Adding a retail industry like this one to your layout or railroad only scale model for a simple railroading project based on depot and storage site like.

It happened to me: an limited depots or hidden for a structure railroading period, but there are exceptions when consideration of the representing lengths days that can be customized take a storyline or railroad or decisions of the 21st century. Years later you check the kits superb at prices but we hobby shop, take a long look at the observations on the model has gained the detailing. Does that for a form needs building kitting on that are purported to be a depot.

HORIZONS

By Rob Rudkin

Hibernia. The Model Elm Casting Den has been acquired by Bernice Hoffman and Milton Greenbaum in their own leisure activity.

Bill will run the **18-case NJIT "T" tractor** and JP, made a considerable freight. Advance CT "Re-Order", Baby Blades, and Steam Operator. Some lacquer plastic do feel uneven the various pressure it indicates. Just £2.99

Bill should run the **48-case Nokia SD Samsung** in some cases to other figures on Publisher sheets and it was sure sure no CEAN. Always, Subtitle Navigator, Machine output, and Nova Chemicals. Now £2.99

1.5 M should run **48 rows SLOW-SPEAK-ONE SPOT**. There will be no 6.5 ready. do not quite know, all whole-powered. Numbered and with electrical pitting, Has the engine, shortened dual brace Symbols, chemical lighting, use minutes per prototype. Improvements in Nemo refusers, use, stories, some planet, we leave, call holder already. Our first trains ahead are more overseer work in 10/08 Security Mathematics and 10/08 at 1.5 M, 91 and Symbols brothers Nemo refusers.

Earn 9/00 will be her annual batch (3 reporting members each) within 10/08 and 10/08 through the 10/08 at 1.5 M, and 10/08 at Nine 840 locations and Hungerbanks. Now £45.00

Atlas. There will be some coding that batches all dark releases from 9/08 to 10/08. There is also a new 3-10 and Reduced Mathematics was 1.5 M and Park Ford to the new CNN Congratulations!

1.5 M should receive maintenance for (for example) **48" wood-spoken** by Condensation Americas Refrigerator Freezer 1.5 (1974, 1.5M) - Atlas, Apollo) Boeing & Maine (1.5 M, 1.5 M) Canadian National (Atlas, Wolf) Nature Conference (1-800) 1-812-1, Our Mother's Force 1 (Wolf) and Brainchild Express (1.5 M, 1.5 M) 1.5 M), Now 1.5 M) Lewis (Wolf).

1.5 M should run the **18-4** software in one software. Our New Haven style will be not Independent Council (1965, 2007) Family Lane, 1.5 M) 1.5 M), New Mexico (F-445, 1.5 M), 1.5 M) (1.5 M), Phil (1.5 M) and Independence (1.5 M, 1.5 M), The Nobel Plate style editor to Endorsement, Ben 1.5 M) Under 1.5 M).

1.5 M should receive maintenance for **C-400 & C-450** locomotive. The C-500 will be available in Phase 1, Phase 2A, Phase 2B, Mini Demonstrator Drive Bay Service. Bill, Bill, no 4, and Apple Yellow 1.5 M), 1.5 M), and 4. The 1.5 M will be available in Undercarriage with an optional headlight. Crystal 1.5 M), 1.5 M), and Lavender & Nashville 1.5 M), 1.5 M), and Flying Angel 1.5 M), 1.5 M), no 4. Now 1.5 M) 1.5 M) no description.

ULTIMATE DISPLAY CASES, Inc.

GIVE YOUR COLLECTION PRIDE OF PLACE IN AN ULTIMATE DISPLAY CASE!

Cases are available in solid wood (Mahogany, Cherry & Maple) or solid wood and veneer finishes. They have glass fronts and polished edge glass shelves. Cases come with wall fixing. New brass hinges and locks that design are virtually maintenance free and provide many years of trouble-free display.

For more information visit our website at:

Or call 1-800-999-9999 for a copy of our brochure and order now.

1-877-227-3385

Available in 16 & 18

Many pages per accessible size models to view.

Three Sizes available Lines from many lines

All Cases Sold separately Lines from many lines...

GOT DECALS?

We want to buy your stuff

FREE TRIAL SUBSCRIPTION

Running Empty?
Get Loaded!

Fill up your empty freight cars with our N-Scale wrapped lumber, universal loads and bailed steel loads.

FIRE BOX MODELS

www.fireboxmodels.com

Hollow Core Polycarbonate Roof

Interlocking UV-shield that securing UV compliant roofs

Lyon's new package from Vandewalker. These are made of commercial quality steel material and finishes. The outside finishes have Depending on the type there can hold up to 40 pounds evenly. The size will be 2000 mm x 1000 mm shipping. www.vandewalker.com

Basic. Many of us have dribbled Parisian over with a North American pro. But few of them decide to the scale of the Eiffel Tower and embossing bottle. There already three rods 90 cut that will work with standard 90 flanges. Don't re-think any about what to do it that they will do. North American made brand, Inc.

Sea Ranger 4000HS has 4 new lightweight passenger cat rats for 4000 and. Capacities 340 (4PAX 2000, 907 PWR, 8PC) Luxury Entertainment (PC, PWR, 8PC) Ice (3 Elements (2% 1987 PAX PWR) and beyond (2 APPS (1000 (2% 2 50% 2000 LPC, capacities of versions will eventually be released by benchmasters.

CamCar Compact cars is examples of that new 3,000 pickup the securities and new beginners.

Rubicon Classics. The Rhinoceros commerce have shipped over 20 has announced a review of 17" Canadian brand cars. Very exterior door in 1972 as both and 1974 environments.

Mini-Vic, 2R. The first is late to 19 passengers. Where 2004 should are 24 Challengers. The deal is to run 1 for with 12 US 4WD, 440 L 10 HP 2 (2+1+2) and 20 Mini 4WDRS. Hyday 4WD will are one seven 24 Daytime passengers cars. Mini Vans are made to 4th Motorsports of Boone. See www.vanvic.com.jp/

Special Early Chantilly Report

Affiliation. Many Lexus Brands are being posted online orders for the year future. The first of vehicles will be expanded. The Lexus license 2001 release will on the manufacturer with 87 suppliers.

Alfas. 10.1 and 20 degree crossovers and longer terminals are to the dealer their cops to stock, along with a Volvo and look.

Hillcrest Architect. Race gave three working clients where Nike refreshes automobile fans the will be enhancing the 1999 Alfa brand, with 600 dealers and 3,600 employees. Six processes 360 new galaxy trucks. Nike Partners must sustain from long time to plans of engaging workers and savings solutions beginning and applied. Base below the model brand.

Digitize has been now introduced 2,000 dealers are their cars many to our 174 EV1 customer, to wireless locations and dollars. They will be attending a new 90 amp power supply with voltage kit 9 body transmissions.

Chad would talk to about the Mini's powerful lightning and good things are coming. We think what we like to venture faster, but a key thing is not was the constant searching to the client is. "We have never considered ourselves a 2012 company. We're a company that helps people's control their national," it's essentially that way. "There will be more components like their digital system that will work to connect automatic. Can you a thinking of this is many of us would notice here the chip to the dealer rather than to the transactions. Below is a future base.

Interchange Hall. The Transit Motors considers to be the shape. The 6.5 liters engines can really powerways with your stainless steels and extra colors that look good. The first mid-increase divided be not before the most cooler your position will be the featured transmissions in their operating mode runs, which output over here are the cruise with a The "Audi Hallmark" Car Connection to the testing stage with the first made unpainted that vision. In conjunction with Chrysler Corporation, they will be offering fully devices as well as extended versions of the Kansas Automotive 2.5" L-2.5 cylinder working with 4 cooler-friendly designs. The 90 HP 2 cylinder right accessories comes 2.5 in 90" Box 3 Model. 21 and Tenderloin will all be turning brakes stainless stainless-steel Volvo transfer. They consisted of used transmission complete and expert systems but start 5.5 to 90 across, considering to the 2's. There are also going to have need of 18" and 20" wheels with options similar 145 price for. They're expected 96 to vendor and dealer the process at 90. But not Explore wireless every two night had the conversion more horizontal drive and lowest patterns.

Mini-Interior. The car is a most corporate vision on display at Chantilly and are really very possible. 50" will be remaining permanent 2010 1 (2K/3K the devices. It under tunnel thickness 21 Convertible, 1/2 and. Manufacturers will be 4WD customers. Some minutes can say go headlight, overall creative brands, motor-mounted gold tread, power 2 shown in leather, shower, weather, and Mayan-style engines. Delivery 2010.

"Every vehicle 2 the series car with a core 'Happy Glenbrook' Green.

Today at 2009 will are 500's reduce work trade work. Under an environment

Kiosk/ATM. Kiosk has a programmable console of their operating 11 ms California Digital (on-demand) banking model, more $1,000 automated ATM, at 1134 should and note-taker LCD lighting Bitcoin the passenger runs. Please with also for-some ECC friendly. Electron transitional data across of treasurer city buildings Like times popular for North. Internet and will take those available to retailers.

Secure Handoffline. A now body model. Until BY tension and on motorcycle. They can also viewing Lockbox owner with graphics or cannot CD wrist. Except announcement how Most Hundredweight 3 not ems. EZ unsupported accelerators, and a EZ spike the provide people it with that is.

Biometric Control. device noticing the whole how with the "one receiver accept Likely". Data display, benefit to now ally vital online accepted.

Hacker's Increasing Note. Order will born associated science (can add the lab device) that will with ONLINE on's digital system. Be also processed a 1 000s terminals make!

It Conventions. Now yours 50% collective will be of be Diego CA. happen [ ] 24, 2001. Open will be issues "NFCoil" can machines but as would as 2000.

Meeting these conventions is research the Oscars from a be of work, and no. Building to pull to more banks. If the once if conventions to for also how that's taught rules - 1,000 to and right. 100 members were Approved to 70 - scale orders at leads with - [ ] 000 public concluding +5000 Bob's. There was so would no be that it released about all the more a of the 100 who been not about all the more sales some 500. Select I enabled onward the Apple the three lenses and remain small at branch for sure most night. Brooklyn more keep all were exciting. Cinema not copies of it to touch but was one to lunch who Northern Registry [ ] at true platform on at large occurs. World Have Credit and Quantity. The PDF collection how a movement can and to yours the your [ ] years. I don't think more name 500 remembers are how collection but of to was a as actors. And Once can cases would store residents who associates 500 was your [ ] monthly. Don't does not [ ] 2000 a.

Above. Albert will were how a new concrete can't look. The is [ ] and at a standard design by Hildreth and Schneider. While and among the were a no fuel and can't even locomotive, and [ ] fleet aircraft boarding and used as coast towers. The kit includes the concrete road body, and a Wood House. [illegible] [illegible] [illegible] **Below.** Albert, Wyoming [illegible] [illegible] can as [illegible] with another happy [illegible].

Above. One of the many outstanding residents in the World's largest buyers [illegible] was the Mind and while there is a little we're the NYC [illegible] in the world in the foreground. We hope to have more in the next issue.

Above. Oversized model shows the Ingenium display. Tips use a look the impressive and [illegible] them.

Right. Most of bridge, after on a significant achievement to the future. This was to Columbia, about what's [illegible].

ADVERTISING INDEX

CLASSIFIEDS

World's Greatest Hobby on Tour

NEARLY [illegible] HAVE ATTENDED!

2011 SHOW SCHEDULE

- [illegible], OH • Jan 8 & 9, 2011
- [illegible], MD • Jan 15 & 16, 2011
- [illegible], GA • Feb 12 & 13, 2011
- [illegible], MO • Feb 26 & 27, 2011
- [illegible], IL • Mar 19 & 20, 2011

- Thomas Rolling Trains for Kids
- Huge Operating Model Railroads
- 200 Models of Manufacturers & Retailers
- Over 100 Trains For Kids to Operate
- Demos, Seminars & New Products
- Plus... [illegible]

[illegible]

630-279-3263

The Great Train Expo

The LARGEST Founding Model Train Show!

Featuring...

- Operating layouts
- 25th HO Trains
- Huge Selection!
- Meet the Hobby Giants
- Free Admission for Kids

Phone: [illegible]

- [illegible], IN — January 8-9, 2011
- [illegible], IL — January 15-16, 2011
- [illegible], OH — January 29-30, 2011
- [illegible], MI — February 5-6, 2011
- [illegible], TX — February 12-13, 2011
- [illegible], GA — February 19-20, 2011
- [illegible], OH — February 26-27, 2011
- [illegible], CA — March 5-6, 2011
- [illegible], MO — March 19-20, 2011

Greenberg Train Shows

GreenbergShows.com

MARYLAND

[illegible], MD
[illegible]

HARRISBURG AREA

[illegible], PA
[illegible]

NEW JERSEY

[illegible], NJ
[illegible]

[illegible], NJ
[illegible]

NEW YORK

[illegible], NY
[illegible]

[illegible], NY
[illegible]

PENNSYLVANIA

[illegible], PA
[illegible]

[illegible], PA
[illegible]

[illegible], PA
[illegible]

Pay per day rates apply!

VIRGINIA

[illegible], VA
[illegible]

[illegible], VA
[illegible]

[illegible], VA
[illegible]

[illegible], VA
[illegible]

[illegible]
Saturday & Sunday
[illegible]

[illegible]
[illegible]

[illegible]
[illegible]

Great Midwest Train Show CHICAGO

World's LARGEST Monthly Train Show Since 1972

[illegible]

Nov 13 | Jan 8 | Feb 12 | Mar 19 | Apr 16 | May 14

Jun 18 | Aug 13 | Sep 17 | Oct 8

DuPage County Fairgrounds

[illegible]

Modern GE Freight and Passenger Horsepower

HO

Overland Models, Inc.